EXHIBIT 2

Part 3 of 4

Search Notes	**Application/Control No.** 15010573	**Applicant(s)/Patent Under Reexamination** VAN ZIJST, ERIK
	Examiner MIKE HONG	**Art Unit** 2426

CPC- SEARCHED

Symbol	Date	Examiner
h04n21/2662, h04n21/234	6/10/2016	MH

CPC COMBINATION SETS - SEARCHED

Symbol	Date	Examiner

US CLASSIFICATION SEARCHED

Class	Subclass	Date	Examiner

SEARCH NOTES

Search Notes	Date	Examiner
Inventorship search	6/10/2016	MH
east search	6/10/2016	MH

INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	15010573
Filing Date	2016-01-29
First Named Inventor	Van Zijst, Erik
Art Unit	2425
Examiner Name	Michael Hyun Hong
Attorney Docket Number	GPB1-US9

U.S.PATENTS

Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	4422171		1983-12-20	Wortley	
	2	6061399		2000-05-09	Lyons	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS

Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20060190641		2006-08-24	Routliffe	

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		nent	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							

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EFS Web 2.1.17

INFORMATION DISCLOSURE STATEMENT BY APPLICANT **(Not for submission under 37 CFR 1.99)**	Application Number		15010573
	Filing Date		2016-01-29
	First Named Inventor	Van Zijst, Erik	
	Art Unit		2425
	Examiner Name	Michael Hyun Hong	
	Attorney Docket Number		GPB1-US9

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T5
	1		

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	15010573
	Filing Date	2016-01-29
	First Named Inventor	Van Zijst, Erik
	Art Unit	2425
	Examiner Name	Michael Hyun Hong
	Attorney Docket Number	GPB1-US9

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☒ See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Stephen Y. Liu/	Date (YYYY-MM-DD)	2016-06-23
Name/Print	Stephen Y. Liu	Registration Number	62883

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed . Time will vary depending upon the individual ents on the amount of time you and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

system of records may be disclosed, as a routine use, to the public after either publication of
rsuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record
may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

EFS Web 2.1.17

Electronic Acknowledgement Receipt

EFS ID:	26157494
Application Number:	15010573
International Application Number:	
Confirmation Number:	9731
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Customer Number:	122200
Filer:	Stephen Y. Liu/Carolyn Bridwell
Filer Authorized By:	Stephen Y. Liu
Attorney Docket Number:	GPB1-US9
Receipt Date:	23-JUN-2016
Filing Date:	29-JAN-2016
Time Stamp:	17:24:39
Application Type:	Utility under 35 USC 111(a)

ion:

nt	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	GPB1US9_IDS_Statement.pdf	67206 0c5bc320bc1fd528e01e886f0ec5b16568ca33f7	no	2

Warnings:

Information:

2	Information Disclosure Statement (IDS) Form (SB08)	GPB1-US9_IDS.pdf	1035151 5f98d5732ea520421b8a33bbb5960837f54a5666	no	4
Warnings:					
Information:					
			Total Files Size (in bytes):	1102357	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Blitz Stream Video, LLC
Serial No.:	15/010,573
Filing Date:	January 29, 2016
Title:	Layered Multicast and Fair Bandwidth Allocation and Packet Prioritization
Confirmation No.:	9731
Examiner:	Michael Hyun Hong
Art Unit:	2465
Attorney File No.:	GPB1-US9

INFORMATION DISCLOSURE STATEMENT

In accordance with 37 CFR §1.56, and in accordance with the provisions of 37 C.F.R. §§1.97 and 1.98, Applicant hereby makes disclosure of the patents, publications, and/or other information listed on the accompanying form PTO/SB/08A, which references are considered to be potentially material to the patentability of the invention disclosed in the above-referenced application. Copies of the non-US listed references are submitted herewith.

In accordance with 37 C.F.R. §1.97(h), the filing of this Information Disclosure Statement shall not constitute an admission that any information cited therein is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b). In the interest of full and complete disclosure to the Office, some or all of the art cited herein may not be considered by Applicant(s) or the undersigned to be material under the new standards of materiality defined in 37 C.F.R. §1.56(b), [illegible], 1992, but may be material under the old [illegible] riality defined in 37 [illegible] a), last amended on November 28, 1988, or may merely be technical background which may be of interest to the Examiner. In accordance with 37 C.F.R. §1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made.

This Information Disclosure Statement is being filed under 37 C.F.R. § 1.97(c)(1) before the mailing date of a final action under § 1.113, a notice of allowance under § 1.311, or an action that otherwise closes prosecution in the application. Accordingly, this Information Disclosure Statement is accompanied by the following 37 C.F.R. § 1.97(e) statement:

> The undersigned hereby certifies that to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in this statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this statement.

Written notification that these references have been considered in their entirety by return copy of the enclosed form, completed by the Examiner, is respectfully requested.

No fees are believed to be required. If, however, any other fees are required, I authorize the Commissioner to charge these fees to Carstens & Cahoon LLP, Deposit Account No. 50-0392.

Respectfully submitted,

By: /Stephen Y. Liu/
Stephen Y. Liu
Registration No. 62,883
Attorney for Applicant

Date: June 23, 2016

CARSTENS & CAHOON, LLP
P.O. Box 802334
Dallas, TX 75380
(972) 367-2001 Telephone
(972) 367-2002 Facsimile

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/010,573	01/29/2016	Erik Van Zijst	GPB1-US9	9731

122200 7590 09/09/2016
Carstens & Cahoon, LLP
P.O. Box 802334
Dallas, TX 75380

EXAMINER	
HONG, MICHAEL HYUN	

ART UNIT	PAPER NUMBER
2426	

NOTIFICATION DATE	DELIVERY MODE
09/09/2016	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

panoptis@cclaw.com
docketing@panoptis.com

PTOL-90A (Rev. 04/07)

Applicant-Initiated Interview Summary	**Application No.** 15/010,573	**Applicant(s)** VAN ZIJST, ERIK	
	Examiner MICHAEL HONG	**Art Unit** 2426	

All participants (applicant, applicant's representative, PTO personnel):

(1) *MICHAEL HONG*. (3)______.

(2) *Stephen Liu*. (4)______.

Date of Interview: *02 September 2016*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: ______.

Issues Discussed ☐101 ☐112 ☐102 ☒103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *Krishnamachari*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

discussed proposed claim amendments. examiner agreed that amendments would overcome rejection..

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or
e, or the mailing date of this interview summary form, whicl statement of the substance of the

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/MICHAEL HONG/
Primary Examiner, Art Unit 2426

U.S. Patent and Trademark Office
PTOL-413 (Rev. 8/11/2010) **Interview Summary** Paper No. 20160902

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not [illegible] identification of the arguments is sufficient if the general na[illegible]incipal arguments made to the [illegible]e understood in the context of the application file. Of cour[illegible] desire to emphasize and fully [illegible]those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Blitz Stream Video, LLC
Serial Number:	15/010,573
Filing Date:	January 29, 2016
Title:	Layered Multicast and Fair Bandwidth Allocation and Packet Prioritization
Confirmation No.:	9731
Examiner:	HONG, Michael Hyun
Art Unit:	2426
Attorney File:	GPB1.US9

RESPONSE TO OFFICE ACTION MAILED JUNE 16, 2016

This paper is being filed responsive to an Office Action mailed June 16, 2016. No fees are believed to be due at this time. If however, fees are due, I authorize the Commissioner to charge these fees to Carstens & Cahoon LLP, Deposit Account No. 50-0392. No extension of time is believed to be necessary. If, however, an extension of time is required, the extension is requested, and I authorize the Commissioner to charge any fees for this extension to Carstens & Cahoon LLP, Deposit Account No. 50-0392.

Amendments to the Claims are contained in the listing of the claims, which begins on page 2 of this paper.

Remarks/Arguments begin on page 9 of this paper.

Conclusion begins on page 12 of this paper.

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A video signal distribution system ~~comprising~~ for a source endpoint that scalably encodes video signals into layers to form a layered video data stream including a base layer and a set of enhancement layers, wherein the distribution system comprises:

~~a source endpoint, wherein the source endpoint scalably encodes video signals into layers to form a layered data stream, wherein the layered data stream comprises a base layer and a set of enhancement layers;~~

a scalable video coding router, wherein the scalable video coding router forwards the base layer from the source endpoint to a video receiver endpoint, and wherein the scalable video coding router selectively forwards one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers based upon information received by the scalable video coding router; and

wherein the layered video data stream is transmitted via a communications channel configured for a selected network protocol.

2. (Original) The video signal distribution system of claim 1, wherein the information [illegible] alable video coding router relates to throug [illegible] of the communications channel linking the scalable video coding router and the video receiver endpoint.

3. (Original) The video signal distribution system of claim 1, wherein the information received by the scalable video coding router is directly related to video processing capabilities of the video receiver endpoint.

4. (Original) The video signal distribution system of claim 1, wherein the scalable video coding router divides available bandwidth among a plurality of data streams, and wherein the scalable video coding router prioritizes forwarding of the set of enhancement layers.

5. (Currently Amended) The video signal distribution system of claim 1, wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

6. (Currently Amended) The video signal distribution system of claim 2, wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier,

wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs,

wherein the information received by the scalable video coding router is related to rtion of the communication channel linkin leo coding router and the video receiver endpoint, and

wherein the information includes a request for retransmission of one or more packets from the layered video data stream.

7. (Original) The video signal distribution system of claim 1, wherein the selected network protocol is TCP/IP.

8. (Currently Amended) A method for transmitting video signals in a video signal distribution system comprising a source endpoint, a scalable video coding router, and a set of one or more video receiver endpoints, the method comprising:

receiving, at the scalable video coding router, ~~encoding video signals into layers to form~~ a layered video data stream~~, wherein the layered data stream comprises~~ comprising a base layer and a set of enhancement layers;

receiving information relating one or more video receiver endpoints;

forwarding, from the scalable video coding router, the base layer to the one or more video receiver endpoints; and

selectively forwarding, from the scalable video coding router, one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers based upon the information relating to the one or more receiver endpoints;

wherein the layered video data stream is transmitted via a communications channel configured for a selected network protocol.

9. (Original) The method of claim 8, wherein the information received relates to throughput in a portion of the communications channel linking the scalable video coding router and the one or more video receiver endpoints.

The method of claim 8, wherein the inforn s directly related to video processing capabilities of the one or more video receiver endpoints.

11. (Original) The method of claim 8, further comprising:

dividing available bandwidth among a plurality of data streams; and

prioritizing the set of enhancement layers for the forwarding step.

12. (Currently Amended) The method of claim 8, wherein each layer of the layered video data stream comprises data packets, the method further comprising:

encoding a sequence number and a priority identifier in each of the data packets, wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

13. (Currently Amended) The method of claim 9, wherein each layer of the layered video data stream comprises data packets, the method further comprising:

encoding a sequence number and a priority identifier in each of the data packets, wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs,

wherein the information received is related to throughput in a portion of the communication channel linking the scalable video coding router and the video receiver endpoint, and

wherein the information includes a request for retransmission of one or more data packets

video data stream.

14. (Original) The method of claim 8, wherein the selected network protocol is TCP/IP.

15. (New) A video signal distribution system for a source endpoint that scalably encodes video signals into layers to form a layered video data stream that comprises a base layer and a set of enhancement layers, wherein the video distribution system comprises:

a scalable video coding router, wherein the scalable video coding router forwards the base layer from the source endpoint to a set of video receiver endpoints; and

wherein the scalable video coding router forwards all of the set of enhancement layers to a first subset of the set of receivers based upon information received by the scalable video coding router;

wherein the scalable video coding router selectively forwards one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to any remaining receiver in the set of receivers based upon the information received by the scalable video coding router; and

wherein the layered video data stream is transmitted via a communications channel configured for a selected network protocol.

16. (New) The video signal distribution system of claim 15, wherein the information received by the scalable video coding router relates to throughput in a portion of the communications channel linking the scalable video coding router and the video receiver endpoint.

17. (New) The video signal distribution system of claim 15, wherein the information received by the scalable video coding router is directly related to video processing capabilities of the video receiver endpoint.

18. (New) The video signal distribution system of claim 15, wherein the scalable video coding router divides available bandwidth among a plurality of data streams, and wherein the scalable video coding router prioritizes forwarding of the set of enhancement layers.

19. (New) The video signal distribution system of claim 15, wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

20. (New) The video signal distribution system of claim 16, wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier,

wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs,

wherein the information received by the scalable video coding router is related to throughput in a portion of the communication channel linking the scalable video coding router and the video receiver endpoint, and

wherein the information includes a request for retransmission of one or more packets from the layered video data stream.

21. (New) The video signal distribution system of claim 15, wherein the selected network protocol is TCP/IP.

REMARKS

Claims 1-21 are currently pending in the present application. By this response, claims 1, 5, 6, 8, 12, and 13 are amended; and claims 15-21 are added. No claims have been canceled or withdrawn herein. Further, no new matter is added herein.

Support for the amendment to the claims can be found in the claims as originally written, and in the Original Specification at least in ¶¶ 111–113. Furthermore, support for the amendment to independent claims 1 and 8 can be found in the Original Specification at least as ¶¶ 117 and 131.

Applicants have carefully studied the outstanding Office Action. The present Response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of this application is respectfully requested. Applicants respectfully request reconsideration and withdrawal of the Examiner's rejections in view of the foregoing amendments and following remarks.

Summary of Examiner Interview

Applicant thanks Examiner Hong for granting an interview that was held on September 2, 2016. Parties to the interview discussed the art cited in the presently pending office action and Applicant's proposed claim amendments. The Examiner agreed that the combination of references did not teach or suggest the limitation "wherein the scalable video coding router selectively forwards one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers based upon information received by the scalable video coding router," as recited in the amended independent claims.

Claim Rejections - 35 USC § 102

9 and 11

1, 2, 4, 8, 9, and 11 are rejected under pre-AIA 35 USC 102(b) as being anticipated by Krishnamachari (US 2003/0072376).

Response

As discussed in the Examiner interview, the Krishnamachari reference discloses a method that addresses congestion by altering the modulation of different streams in an encoded video stream based upon priority. Importantly, Krishnamachari's method requires that **all** streams are transmitted, as taught below:

> Thus, for example, instead of transmitting all different priority streams using the same modulation (i.e., rate), a lower, more robust, modulation is preferably used for higher priority streams, and a higher, less robust, modulation is preferably used for lower priority streams. The increase in time required to transmit the higher priority streams at a lower rate is appropriately compensated by the decrease in the time required to transmit the lower priority streams at a higher rate. In this manner, the average transmission rate is maintained to be equal to a target rate that would be used if all the streams were transmitted with a single modulation.

(*See*, Krishnamachari, ¶ 16) In contrast, Applicant's amended claims describe a router that forwards fewer than all of the enhancement streams, as disclosed in the following limitation:

> wherein the scalable video coding router selectively forwards one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers based upon information received by the scalable video coding router;

For this reason, independent claims 1 and 8 are not anticipated by the Krishnamchari reference. Furthermore, dependent claims 2, 4, 9, and 11 are also not anticipated by virtue of their dependency from one of claims 1 and 8. Applicant respectfully requests reconsideration and withdrawal of the corresponding rejections.

Claim Rejections – 35 USC § 103

Claims 3 and 10

Claims 3 and 10 are rejected under pre-AIA 35 USC 103(a) as being unpatentable over US 2003/0072376) in view of Parkkinen (U).

As discussed above, amended claims 1 and 8 recite a limitation not taught or suggested by Krishnamachari. Because Parkkinen does not cure that deficiency, independent claims 1 and 8 would be nonobvious over a combination of Krishamachari and Parkkinen. Therefore dependent claims 3 and 10 are nonobvious by virtue of their dependency from one of independent claims 1 and 8. Applicant respectfully requests reconsideration and withdrawal of the corresponding rejections.

Claims 5-7 and 12-14

Claims 5-7 and 12-14 are rejected under pre-AIA 35 USC 103(a) as being unpatentable over Krishnamachari (US 2003/0072376) in view of Li (US 2004/0071083).

Response

As discussed above, amended claims 1 and 8 recite a limitation not taught or suggested by Krishnamachari. Because Li does not cure that deficiency, independent claims 1 and 8 would be nonobvious over a combination of Krishamachari and Li. Therefore dependent claims 5-7 and 12-14 are nonobvious by virtue of their dependency from one of independent claims 1 and 8. Applicant respectfully requests reconsideration and withdrawal of the corresponding rejections.

CONCLUSION

It is respectfully urged that the subject application is patentable over the references cited by Examiner and is now in condition for allowance. Applicants request consideration of the application and allowance of the claims. If there are any outstanding issues that the Examiner feels may be resolved by way of a telephone conference, the Examiner is cordially invited to contact Stephen Y. Liu at 972-367-2001.

The Commissioner is hereby authorized to charge any additional payments that may be due or credit any overpayments to Carstens & Cahoon, LLP Deposit Account 50-0392.

Respectfully submitted,

By: /Stephen Y. Liu Reg. No. 62883/
Stephen Y. Liu
Registration No. 62,883
Attorney for Applicants

Date: September 15, 2016

CARSTENS & CAHOON, LLP
P.O. Box 802334
Dallas, TX 75380
(972) 367-2001 Telephone
(972) 367-2002 Facsimile

Electronic Patent Application Fee Transmittal

Application Number:	15010573
Filing Date:	29-Jan-2016
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Filer:	Stephen Y. Liu/Alycia Simpson
Attorney Docket Number:	GPB1-US9

Filed as Large Entity

Filing Fees for **Utility under 35 USC 111(a)**

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt

EFS ID:	26909102
Application Number:	15010573
International Application Number:	
Confirmation Number:	9731
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Customer Number:	122200
Filer:	Stephen Y. Liu/Alycia Simpson
Filer Authorized By:	Stephen Y. Liu
Attorney Docket Number:	GPB1-US9
Receipt Date:	15-SEP-2016
Filing Date:	29-JAN-2016
Time Stamp:	09:53:57
Application Type:	Utility under 35 USC 111(a)

ion:

nt	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$180
RAM confirmation Number	11929
Deposit Account	500392
Authorized User	LIU, STEPHEN Y

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 CFR 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 CFR 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 CFR 1.19 (Document supply fees)

Charge any Additional Fees required under 37 CFR 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	GPB1US9_IDS_Statement.pdf	66770 d4333db3fd227c04ef51c18c3c0dfd6da8d9c31f	no	2
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	GPB1US9_IDS.pdf	1035278 6f472858d44f623e5875888e488ab2e3d3aa420b	no	4
Warnings:					
Information:					
3	Amendment/Req. Reconsideration-After Non-Final Reject	GPB1US9_ROA_as_filed.pdf	123188 f71d52954f849b8f8eb2d1368e4ce4378ca82375	no	12
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	31192 51873ec8d1d9762b5559b558be0c8fa0473ef1c1	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1256428		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Blitz Stream Video, LLC
Serial No.:	15/010,573
Filing Date:	January 29, 2016
Title:	Layered Multicast and Fair Bandwidth Allocation and Packet Prioritization
Confirmation No.:	9731
Examiner:	Michael Hyun HONG
Art Unit:	2426
Attorney File No.:	GPB1-US9

INFORMATION DISCLOSURE STATEMENT

In accordance with 37 CFR §1.56, and in accordance with the provisions of 37 C.F.R. §§1.97 and 1.98, Applicant hereby makes disclosure of the patents, publications, and/or other information listed on the accompanying form PTO/SB/08A, which references are considered to be potentially material to the patentability of the invention disclosed in the above-referenced application. Copies of the non-US listed references are submitted herewith.

In accordance with 37 C.F.R. §1.97(h), the filing of this Information Disclosure Statement shall not constitute an admission that any information cited therein is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b). In the interest of full and complete disclosure to the Office, some or all of the art cited herein may not be considered by Applicant(s) or the undersigned to be material under the new standards of materiality defined in 37 C.F.R. §1.56(b), , 1992, but may be material under the old s riality defined in 37 C.F.R. §1.56(a), last amended on November 28, 1988, or may merely be technical background which may be of interest to the Examiner. In accordance with 37 C.F.R. §1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made.

This Information Disclosure Statement is being filed under 37 C.F.R. § 1.97(c)(1) before the mailing date of a final action under § 1.113, a notice of allowance under § 1.311, or an action that otherwise closes prosecution in the application. Accordingly, this Information Disclosure Statement is accompanied by the following 37 C.F.R. § 1.97(e) statement:

> The undersigned hereby certifies that to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in this statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this statement.

Written notification that these references have been considered in their entirety by return copy of the enclosed form, completed by the Examiner, is respectfully requested.

A fee in the amount of $180 is believed to be due at this time. Payment is made by credit card. No other fees are believed to be required. If, however, any other fees are required, I authorize the Commissioner to charge these fees to Carstens & Cahoon LLP, Deposit Account No. 50-0392.

Respectfully submitted,

By: /Stephen Y. Liu/
Stephen Y. Liu
Registration No. 62,883
Attorney for Applicant

Date: September 15, 2016

CARSTENS & CAHOON, LLP
P.O. Box 802334
Dallas, TX 75380
(972) 367-2001 Telephone
(972) 367-2002 Facsimile

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT **(Not for submission under 37 CFR 1.99)**	Application Number	15010573
	Filing Date	2016-01-29
	First Named Inventor	VAN ZIJST, Erik
	Art Unit	2425
	Examiner Name	HONG, Michael Hyun
	Attorney Docket Number	GPB1.US9

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5432798		1995-06-11	Blair	
	2	6426944		2002-07-30	Moore	
	3	7151762		2006-12-19	Ho	
	4	5926758		1999-07-20	Grybos	
	5	6621799		2003-09-16	Kemp, et al.	

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U.S.PATENT APPLICATION PUBLICATIONS Remove

Initial*		ation Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20030023746		2003-01-30	Loguinov	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT **(Not for submission under 37 CFR 1.99)**	Application Number		15010573
	Filing Date		2016-01-29
	First Named Inventor	VAN ZIJST, Erik	
	Art Unit		2425
	Examiner Name	HONG, Michael Hyun	
	Attorney Docket Number		GPB1.US9

	2	20030152076		2003-08-14	Lee	

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Examiner Initial*	Cite No	Foreign Document Number3	Country Code2 i	Kind Code4	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T5
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T5
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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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riate symbols as indicated on the document under WIPO Standard ST.16 if possible. 5 Applicant is to place a check mark here if
English language translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	15010573
Filing Date	2016-01-29
First Named Inventor	VAN ZIJST, Erik
Art Unit	2425
Examiner Name	HONG, Michael Hyun
Attorney Docket Number	GPB1.US9

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☒ See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Stephen Y. Liu/	Date (YYYY-MM-DD)	2016-09-15
Name/Print	Stephen Y. Liu	Registration Number	62,883

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed . Time will vary depending upon the individual ents on the amount of time you n and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. ce, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

system of records may be disclosed, as a routine use, to the public after either publication of rsuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Document code: WFEE

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/010,573	Filing Date 01/29/2016	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED (Column 1)	NUMBER EXTRA (Column 2)	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	09/15/2016	CLAIMS REMAINING AFTER AMENDMENT (Column 1)		HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2)	PRESENT EXTRA (Column 3)	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 21	Minus	** 20	= 1	x $40 =	40
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	x $210 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	**40**

OMENT		CLAIMS REMAINING AFTER AMENDMENT (Column 1)		HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2)	PRESENT EXTRA (Column 3)	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x $ =	
	CFR 1.16(s))						
	ON OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
ANNIE C. SINGLETON

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/010,573	01/29/2016	Erik Van Zijst	GPB1-US9	9731

122200 7590 12/28/2016
Carstens & Cahoon, LLP
P.O. Box 802334
Dallas, TX 75380

EXAMINER	
HONG, MICHAEL HYUN	
ART UNIT	**PAPER NUMBER**
2426	
NOTIFICATION DATE	**DELIVERY MODE**
12/28/2016	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

panoptis@cclaw.com
docketing@panoptis.com

PTOL-90A (Rev. 04/07)

Office Action Summary	**Application No.** 15/010,573	**Applicant(s)** VAN ZIJST, ERIK	
	Examiner MICHAEL HONG	**Art Unit** 2426	**AIA (First Inventor to File) Status** No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *9/15/16*.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ______.
2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.
3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ______; the restriction requirement and election have been incorporated into this action.
4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-21* is/are pending in the application.
5a) Of the above claim(s) ______ is/are withdrawn from consideration.
6)☐ Claim(s) ______ is/are allowed.
7)☒ Claim(s) *1-21* is/are rejected.
8)☐ Claim(s) ______ is/are objected to.
9)☐ Claim(s) ______ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.
11)☐ The drawing(s) filed on ______ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a)☐ All b)☐ Some** c)☐ None of the:
1.☐ Certified copies of the priority documents have been received.
pies of the priority documents have been recei No. ______.
of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ______.
3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ______ .
4) ☐ Other: ______.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 11-13) **Office Action Summary** Part of Paper No./Mail Date 20161221

The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1,2, 4, 8, 9, 11, 15-18 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Krishnamachari (US 2003/0072376) in view of Ammar (US 6,215,766).

Regarding claim 1, 8, Krishnamachari discloses A video signal distribution system comprising for a source endpoint that scalably encodes video signals into layers to form a layered video data stream including a base layer and a set of enhancement

ein the distribution system comprises ([0017]):

a scalable video coding router, wherein the scalable video coding router forwards the base layer from the source endpoint to a video receiver endpoint, and wherein the scalable video coding router selectively forwards one or more of the set of enhancement layers based upon information received by the scalable video coding router ([0018, 0019, 0021]); and

wherein the layered video data stream is transmitted via a communications channel configured for a selected network protocol ([0021]).

Krishnamachari does not specifically disclose forwarding fewer than all of the set of enhancement layers.

However, Ammar discloses disclose forwarding fewer than all of the set of enhancement layers (col. 4 lines 46-53; col. 6 lines 39-43, col. 10 lines 10-25 *Enhancement layers may or may not be sent depending on the congestion of the network and/or the capabilities of the receiver).* It would have been obvious to one of ordinary skill in the art to incorporate the dropping of enhancement layers of Ammar into the system of Krishnamachari in order to save bandwidth by not sending unimportant enhancement layers at all (as opposed to low priority in Krishnamachari).

Regarding claim 2, 9, 16 Krishnamachari discloses wherein the information received by the scalable video coding router relates to throughput in a portion of the communications channel linking the scalable video coding router and the video receiver endpoint ([0019, 0020]).

Regarding claim 3, 10, 17, Krishnamachari does not specifically disclose wherein the information received by the scalable video coding router is directly related to video processing capabilities of the video receiver endpoint.

However, Ammar discloses wherein the information received by the scalable video coding router is directly related to video processing capabilities of the video receiver endpoint (col. 4 lines 46-53).

Regarding claim 4, 11, 18, Krishnamachari discloses wherein the scalable video coding router divides available bandwidth among a plurality of data streams, and wherein the scalable video coding router prioritizes forwarding of the set of enhancement layers ([0018-0021]).

Regarding claim 15, Krishnamachari discloses A video signal distribution system for a source endpoint that scalably encodes video signals into layers to form a layered video data stream that comprises a base layer and a set of enhancement layers, wherein the video distribution system comprises ([0017]):

a scalable video coding router, wherein the scalable video coding router forwards the base layer from the source endpoint to a set of video receiver endpoints ([0018, 0019, 0021]); and

wherein the scalable video coding router forwards all of the set of enhancement layers to the set of receivers based upon information received by the scalable video coding router ([18, 0019, 0021]);

wherein the scalable video coding router selectively forwards one or more enhancement layers, based upon the information received by the scalable video coding router ([0018, 0019, 0021] *assigning priority is selectively forwarding*); and wherein the layered video data stream is transmitted via a communications channel configured for a selected network protocol ([0021]).

Krishnamachari does not specifically disclose forwarding all of the set of enhancement layers to a first subset of the set of receivers, selectively forwarding fewer than all of the set of enhancement layers to any remaining receiver in the set of receivers.

However, Ammar discloses forwarding all of the set of enhancement layers to a first subset of the set of receivers, selectively forwarding fewer than all of the set of enhancement layers to any remaining receiver in the set of receivers (col. 6 lines 39-43, col. 10 lines 10-25 *level 3 receivers all the layers, level 2 receivers receive only 2 of the layers, receivers can also less layers depending on congestion)*. It would have been obvious to one of ordinary skill in the art to incorporate the dropping of enhancement layers of Ammar into the system of Krishnamachari in order to save bandwidth by not sending unimportant enhancement layers at all (as opposed to low priority in Krishnamachari).

Claim 5-7, 12-14, 19, 20, 21 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Krishnamachari (US 2003/0072376) in view of Ammar (US

. ..ew of Li (US 2004/0071083).

Regarding claim 5, 12, 19, Krishnamachari in view of Ammar does not specifically disclose wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

However, Li discloses wherein each layer of the layered data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs ([0027, 0028, 0030]). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the packet identifiers of Li into the system of Krishnamachari in view of Ammar in order to assign specific packets to various layers in the encoding of data.

Regarding claim 6, 13, 20, Krishnamachari in view of Ammar in view of Li disclose wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs, wherein the information received by the scalable video coding router is related to throughput in a portion of the communication channel linking the scalable video coding router and the video receiver endpoint, and wherein the information includes a request for retransmission of one or more packets from the layered video data stream ([0027, 0028, 0030] of Li).

ng claim 7, 14, 21, Krishnamachari in view of Ammar in view of Li discloses wherein the selected network protocol is TCP/IP ([0049] of Li).

Response to Arguments

Arguments are moot in view of new grounds of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the ould be directed to MICHAEL HONG whose telephone number is (571)270-1553. The examiner can normally be reached on M-F (10:30a-6:30p).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Goodarzi can be reached on (571)272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MICHAEL HONG/
Primary Examiner, Art Unit 2426

Notice of References Cited	Application/Control No. 15/010,573	Applicant(s)/Patent Under Reexamination VAN ZIJST, ERIK
	Examiner MICHAEL HONG	Art Unit 2426 — Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2003/0072376 A1	04-2003	Krishnamachari, Santhana	H04N21/234327	375/240.26
*	B	US-2003/0206558 A1	11-2003	Parkkinen, Teemu	G10L19/24	370/477
*	C	US-2004/0071083 A1	04-2004	Li, Qiong	H04N21/222	370/230
*	D	US-2003/0195977 A1	10-2003	Liu, Tianming	H04L29/06027	709/231
*	E	US-6,215,766 B1	04-2001	Ammar; Mostafa	H04L12/1886	370/229
	F	US-				
	G	US-				
	H	US-				
	I	US-				
	J	US-				
	K	US-				
	L	US-				
	M	US-				

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office
PTO-892 (Rev. 01-2001) **Notice of References Cited** Part of Paper No. 20161221

Search Notes	**Application/Control No.** 15010573	**Applicant(s)/Patent Under Reexamination** VAN ZIJST, ERIK
	Examiner MIKE HONG	**Art Unit** 2426

CPC- SEARCHED

Symbol	Date	Examiner
h04n21/2662, h04n21/234	6/10/2016	MH

CPC COMBINATION SETS - SEARCHED

Symbol	Date	Examiner

US CLASSIFICATION SEARCHED

Class	Subclass	Date	Examiner

SEARCH NOTES

Search Notes	Date	Examiner
Inventorship search	6/10/2016	MH
east search	6/10/2016	MH
updated east search	12/21/2016	MH

INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

Index of Claims	**Application/Control No.** 15010573	**Applicant(s)/Patent Under Reexamination** VAN ZIJST, ERIK
	Examiner MIKE HONG	**Art Unit** 2426

✓	**Rejected**	-	**Cancelled**	N	**Non-Elected**	A	**Appeal**
=	**Allowed**	÷	**Restricted**	I	**Interference**	O	**Objected**

☐ **Claims renumbered in the same order as presented by applicant** ☐ **CPA** ☐ **T.D.** ☐ **R.1.47**

CLAIM		DATE								
Final	Original	06/10/2016	12/21/2016							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	✓							
	8	✓	✓							
	9	✓	✓							
	10	✓	✓							
	11	✓	✓							
	12	✓	✓							
	13	✓	✓							
	14	✓	✓							
	15		✓							
	16		✓							
	17		✓							
	18		✓							
	19		✓							
	20		✓							
	21		✓							

U.S. Patent and Trademark Office Part of Paper No. : 20161221

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT **(Not for submission under 37 CFR 1.99)**	Application Number	15010573
	Filing Date	2016-01-29
	First Named Inventor	VAN ZIJST, Erik
	Art Unit	2425
	Examiner Name	HONG, Michael Hyun
	Attorney Docket Number	GPB1.US9

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code1	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5432798		1995-06-11	Blair	
	2	6426944		2002-07-30	Moore	
	3	7151762		2006-12-19	Ho	
	4	5926758		1999-07-20	Grybos	
	5	6621799		2003-09-16	Kemp, et al.	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Initial*		ation Number	Kind Code1	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20030023746		2003-01-30	Loguinov	

EFS Web 2.1.17

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.H.H/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	15010573
	Filing Date	2016-01-29
	First Named Inventor	VAN ZIJST, Erik
	Art Unit	2425
	Examiner Name	HONG, Michael Hyun
	Attorney Docket Number	GPB1.US9

	2	20030152076		2003-08-14	Lee	

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number3	Country Code2 i	Kind Code4	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T5
	1							

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T5
	1		

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/MICHAEL H HONG/	Date Considered	12/21/2016

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ocuments at www.USPTO.GOV or MPEP 901.04. [2] Enter ocument, by the two-letter code (WIPO t documents, the indication of the year of the reign of the E the serial number of the patent document. riate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

EFS Web 2.1.17

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.H.H/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT **(Not for submission under 37 CFR 1.99)**	Application Number	15010573
	Filing Date	2016-01-29
	First Named Inventor	VAN ZIJST, Erik
	Art Unit	2425
	Examiner Name	HONG, Michael Hyun
	Attorney Docket Number	GPB1.US9

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☒ See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Stephen Y. Liu/	Date (YYYY-MM-DD)	2016-09-15
Name/Print	Stephen Y. Liu	Registration Number	62,883

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed . Time will vary depending upon the individual ents on the amount of time you m and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

EFS Web 2.1.17

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Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

[illegible] system of records may be disclosed, as a routi[illegible] [illegible]lic after either publication of [illegible] rsuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.H.H/

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L5	5	@ad<"20050126" and ((send or forward or transmit) near2 (enhancement$1 adj layer$1)) same processing	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/21 13:15
L6	3	("20060190641" | "4422171" | "6061399").PN.	US-PGPUB; USPAT	OR	OFF	2016/12/21 13:25
L7	7	("20030023746" | "20030152076" | "5432798" | "5926758" | "6426944" | "6621799" | "7151762").PN.	US-PGPUB; USPAT	OR	OFF	2016/12/21 13:25
S1	1053	(scalable with router)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/03 15:09
S2	763	S1 and protocol	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/03 15:57
S3	0	WO-04010250-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 16:34
S4	2	WO-2004010250-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 16:34
S5	0	@ad<"20050126" and router same (enhancement$1 adj layer$1) same bandwidth same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 17:13
S6	4	@ad<"20050126" and router same (enhancement$1 adj layer$1) same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 17:20
S7	30	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 14:58
S8	11	S7 and priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10
S9	3	S8 and TCP	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10
		S8 and TCP$3	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10
S11	0	@ad<"20050126" and h04n21/2662.cpc	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:15
S12	842	@ad<"20050126" and h04n21/2662.cpc.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:15
S13	65	@ad<"20050126" and h04n21/234.cpc.	US-PGPUB; USPAT; EPO;	OR	OFF	2016/06/10 15:16

			DERWENT			
S14	343	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:48
S15	30	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:48
S16	68	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scalable or scale) and priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:50
S17	15	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scalable or scale) same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:51
S18	21	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (processing)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:25
S19	0	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (receiver with power)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S20	0	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (receiver)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S21	27	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (display)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S22	71	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:29
S23	7	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1 same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:30
S25	2	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1 same priority and (retransmit or retransmission)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:31
S26	5	(US-20040198371-$ or US-20020006161-$ or US-20030072376-$ or US-20030206558-$ or US-20060164987-$).did.	US-PGPUB	OR	OFF	2016/06/12 12:33
S27	1	S26 and tcp	US-PGPUB	OR	OFF	2016/06/12 12:33
S28	7	@ad<"20050126" and (enhancement$1 adj layer$1) same packet$1 same priority and (retransmit or retransmission)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 13:06
[illegible]	[illegible]	and tcp	US-PGPUB; USPAT; EPO; DERWENT	[illegible]	FF	2016/06/12 13:08
S30	762	@ad<"20050126" and (enhancement$1 adj layer$1) same video	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/20 14:38
S31	23	@ad<"20050126" and ((send or forward or transmit) near2 (enhancement$1 adj layer$1)) same video	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/20 14:39

EAST Search History (Interference)

EAST Search History

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12/ 21/ 2016 1:31:21 PM
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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (03-15)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT **(Not for submission under 37 CFR 1.99)**	Application Number	15010573
	Filing Date	2016-01-29
	First Named Inventor	Van Zijst, Erik
	Art Unit	2425
	Examiner Name	Michael Hyun Hong
	Attorney Docket Number	GPB1-US9

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Examiner Initial*	Cite No	Patent Number	Kind Code1	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	2	6061399		2000-05-09	Lyons	

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	1	20060190641		2006-08-24	Routliffe	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT **(Not for submission under 37 CFR 1.99)**	Application Number	15010573
	Filing Date	2016-01-29
	First Named Inventor	Van Zijst, Erik
	Art Unit	2425
	Examiner Name	Michael Hyun Hong
	Attorney Docket Number	GPB1-US9

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T5
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Examiner Signature	/MICHAEL H HONG/	Date Considered	12/21/2016

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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Application Number	15010573
	Filing Date	2016-01-29
	First Named Inventor	Van Zijst, Erik
	Art Unit	2425
	Examiner Name	Michael Hyun Hong
	Attorney Docket Number	GPB1-US9

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☒ See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Stephen Y. Liu/	Date (YYYY-MM-DD)	2016-06-23
Name/Print	Stephen Y. Liu	Registration Number	62883

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed
. Time will vary depending upon the individual
ents on the amount of time you
n and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

system of records may be disclosed, as a routine use, to the public after either publication of
rsuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.H.H/

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-14)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	15/010,573	Filing Date	2016-01-29	Docket Number (if applicable)	GPB1-US9	Art Unit	2426
First Named Inventor	Erik Van Zijst			Examiner Name	Michael Hyun HONG		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, to any international application that does not comply with the requirements of 35 U.S.C. 371, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV.

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

  ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on ______

  ☐ Other ______

☒ Enclosed

  ☒ Amendment/Reply

  ☐ Information Disclosure Statement (IDS)

  ☐ Affidavit(s)/ Declaration(s)

  ☐ Other ______

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months ______
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other ______

FEES

CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
authorized to charge any underpayment of fees, or credit any overpayments, to
Deposit Account No 500392

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature
☐ Applicant Signature

EFS - Web 2.1.15

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-14)
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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/Stephen Y. Liu Reg. No. 62883/	Date (YYYY-MM-DD)	2017-04-28
Name	Stephen Y. Liu	Registration Number	62883

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

n this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Blitz Stream Video, LLC
Serial Number:	15/010,573
Filing Date:	January 29, 2016
Title:	Layered Multicast and Fair Bandwidth Allocation and Packet Prioritization
Confirmation No.:	9731
Examiner:	HONG, Michael Hyun
Art Unit:	2426
Attorney File:	GPB1.US9

AMENDMENT FILED WITH REQUEST FOR CONTINUED EXAMINATION

This paper is being filed responsive to the Final Rejection mailed on December 28, 2016. A fee in the amount of $1200.00 is believed to be required for the Request for Continued Examination. I authorize the Commissioner to charge any fees for this extension to Carstens & Cahoon LLP, Deposit Account No. 50-0392. A one-month extension of time is believed to be necessary, which requires a fee of $200.00. The extension of time is hereby requested and we hereby authorize the Commissioner to charge any fees for this extension to Carstens & Cahoon LLP, Deposit Account No. 50-0392.

Amendments to the Claims are reflected in the listing of claims, which begins on page 2

Remarks/Arguments begin on page 8 of this paper.

Conclusion begins on page 13 of this paper.

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A video router comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to:

receive ~~signal distribution system for a source endpoint that scalably encodes video signals into layers to form~~ a layered video data stream including a base layer and a set of enhancement layers, ~~wherein the distribution system comprises:~~

identify congested links of a network between the video router and a video receiver,

forward ~~a scalable video coding router, wherein the scalable video coding router forwards~~ the base layer from the video router ~~source endpoint~~ to a video receiver ~~endpoint~~, and ~~wherein the scalable video coding router~~

selectively forward[[s]] one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers through the congested links of the network based upon throughput in the congested links, ~~information received by the scalable video coding router;~~ and wherein the video router transmits the layered video data stream according to ~~is transmitted via a communications channel configured for~~ a selected network protocol.

2. (Cancelled) ~~The video signal distribution system of claim 1, wherein the information received by the scalable video coding router relates to throughput in a portion of the communications channel linking the scalable video coding router and the video receiver~~

3. (Currently Amended) The video router ~~signal distribution system~~ of claim 1, wherein the video router further selectively forwards the one or more of the set of enhancement layers based on ~~information received by the scalable video coding router is directly related to~~ video processing capabilities of the video receiver ~~endpoint~~.

4. (Currently Amended) The video router ~~signal distribution system~~ of claim 1, wherein the ~~scalable~~ video ~~coding~~ router divides available bandwidth among a plurality of data streams, and wherein the ~~scalable~~ video ~~coding~~ router prioritizes forwarding of the set of enhancement layers.

5. (Currently Amended) The video router ~~signal distribution system~~ of claim 1, wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

6. (Currently Amended) The router ~~signal distribution system~~ of claim [[2]]5, ~~wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier,~~

~~wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs,~~

~~wherein the information received by the scalable video coding router is related to throughput in a portion of the communication channel linking the scalable video coding router and the video receiver endpoint, and~~

wherein the video router further selectively forwards the one or more of the set of enhancement layers based on ~~information includes~~ a request for retransmission of one or more packets from the layered video data stream.

7. (Currently Amended) The video router ~~signal distribution system~~ of claim 1, wherein the selected network protocol is TCP/IP.

8. (Currently Amended) A method for transmitting video signals ~~in a video signal distribution system comprising a source endpoint, a scalable video coding router, and a set of one or more video receiver endpoints, the method~~ comprising:

receiving~~, at the scalable video coding router,~~ a layered video data stream comprising a base layer and a set of enhancement layers;

identifying congested links of a network between a video router and a video receiver ~~receiving information relating one or more video receiver endpoints~~;

forwarding~~, from the scalable video coding router,~~ the base layer to the ~~one or more~~ video receiver ~~endpoints~~; and

selectively forwarding~~, from the scalable video coding router,~~ one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers through the congested links of the network based upon throughput in the congested links ~~the information relating to the one or more receiver endpoints~~;

wherein the layered video data stream is transmitted via a communications channel configured for a selected network protocol.

9. (Cancelled) ~~The method of claim 8, wherein the information received relates to throughput in a portion of the communications channel linking the scalable video coding router and the one or more video receiver endpoints~~.

10. (Currently Amended) The method of claim 8, wherein the selectively forwarding step further comprises:

selectively forwarding the one or more of the set of enhancement layers based on ~~information received is directly related to~~ video processing capabilities of the ~~one or more~~ video receiver ~~endpoints~~.

ntly Amended) The method of claim 8, further comprising:

dividing available bandwidth among a plurality of data streams; and

prioritizing the set of enhancement layers for the selectively forwarding step.

12. (Previously Presented) The method of claim 8, wherein each layer of the layered video data stream comprises data packets, the method further comprising:

encoding a sequence number and a priority identifier in each of the data packets, wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

13. (Currently Amended) The method of claim [[9]]12, wherein the selectively forwarding step further comprises: ~~each layer of the layered video data stream comprises data packets, the method further comprising:~~

~~encoding a sequence number and a priority identifier in each of the data packets, wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs,~~

~~wherein the information received is related to throughput in a portion of the communication channel linking the scalable video coding router and the video receiver endpoint, and~~

selectively forwarded the one or more of the set of enhancement layers based on ~~wherein the information includes~~ a request for retransmission of one or more data packets from the layered video data stream.

14. (Original) The method of claim 8, wherein the selected network protocol is TCP/IP.

15. (Currently Amended) A video router comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to:

receive ~~signal distribution system for a source endpoint that scalably encodes video signals into layers to form~~ a layered video data stream that comprises a base layer and a set of enhancement layers, ~~wherein the video distribution system comprises:~~

identify congested links of a network between the video router and a set of video receivers;

forward ~~a scalable video coding router, wherein the scalable video coding router forwards~~ the base layer from the video router ~~source endpoint~~ to each of the[[a]] set of video receivers ~~endpoints~~; and

wherein the ~~scalable~~ video ~~coding~~ router forwards all of the set of enhancement layers to any video receiver in the set of video receivers through uncongested links ~~a first subset of the set of receivers based upon information received by the scalable video coding router~~;

wherein the scalable video coding router selectively forwards one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to any remaining video receiver in the set of video receivers through the congested links based upon throughput in the congested links ~~information received by the scalable video coding router~~; and

wherein the layered video data stream is transmitted according to ~~via a communications channel configured for~~ a selected network protocol.

16. (Cancelled) ~~The video signal distribution system of claim 15, wherein the information~~ ~~alable video coding router relates to throug~~ ~~of the~~ ~~ns channel linking the scalable video coding router and the video receiver endpoint.~~

17. (Currently Amended) The video router ~~signal distribution system~~ of claim 15, wherein the video router further selectively forwards the one or more of the set of enhancement layers

based on ~~information received by the scalable video coding router is directly related to~~ video processing capabilities of each of the set of video receivers ~~endpoint~~.

18. (Currently Amended) The video router ~~signal distribution system~~ of claim 15, wherein the ~~scalable~~ video ~~coding~~ router divides available bandwidth among a plurality of data streams, and wherein the ~~scalable~~ video ~~coding~~ router prioritizes forwarding of the set of enhancement layers.

19. (Currently Amended) The video router ~~signal distribution system~~ of claim 15, wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

20. (Currently Amended) The video router ~~signal distribution system~~ of claim [[16]]19, ~~wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier,~~

~~wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs,~~

~~wherein the information received by the scalable video coding router is related to throughput in a portion of the communication channel linking the scalable video coding router and the video receiver endpoint, and~~

wherein the video router further selectively forwards the one or more of the set of enhancement layers based on ~~information includes~~ a request for retransmission of one or more packets from the layered video data stream.

Amended) The video router ~~signal distrib~~ laim 15, wherein

twork protocol is TCP/IP.

REMARKS

Claims 1-21 are pending. By this response, claims 1, 3-8, 10, 11, 13, 15, and 17-21 have been amended. Claims 2, 9, and 16 have been canceled herein. No claims have been added and no claims have been withdrawn herein. No new matter is added.

Support for the amendment to the claims can be found in the claims as originally written or previously presented. In addition, support for the amendment to independent claims 1, 8, and 15 can be found in the Original Specification at least at ¶ 112.

Applicants have carefully studied the outstanding Office Action. The present Response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of this application is respectfully requested. Applicants respectfully request reconsideration and withdrawal of the Examiner's rejections in view of the foregoing amendments and following remarks.

Summary of Examiner Interview

Attorney for Applicant thanks Examiner Hong for granting an interview that was held on February 2, 2017. Parties to the interview discussed certain amendments believed to place the application in condition for allowance; however, after further review Applicant elects not to pursue the previously discussed claims but will proceed with claim amendments as set forth herein.

Claim Rejections – 35 USC § 103(a)

Claims 1, 2, 4, 8, 9, 11, 15-18 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Krishnamachari (US 2003/0072376) in view of Ammar (US 6,215,766).

Response

respectfully submits that claims 1, 5, 8, 11, re nonobvious
nended claims clarify a limitation not taught or suggested by the prior art, and because the Examiner's proposed combination would change a principle of operation of the primary reference.

As to the first point, all claims are nonobvious because the independent claims have been amended to recite a limitation not taught or suggested by the prior art. For example, claim 1 is amended herein to recite the following:

> 1. A video router comprising:
> a memory; and
> a processor, wherein the processor executes instructions stored in the memory to cause the video router to:
> receive a layered video data stream including a base layer and a set of enhancement layers,
> **identify congested links of a network between the video router and a video receiver,**
> forward the base layer from the video router to a video receiver, and
> selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers through the congested links of the network based upon throughput in the congested links, and wherein the video router transmits the layered video data stream according to a selected network protocol.

In contrast, Ammar teaches receivers that maintain add-layer experiment history derived from prior attempts by receivers to add video enhancement layers. (*See*, Ammar col. 3, lines 15 – 20) The experiment history is used by the *receivers* to control which layers to which the receivers may subscribe. (*See*, Ammar, col. 3, lines 23 – 27) As an example, Ammar describes the benefits of a shared experiment history:

> Such shared intelligent partitioning of downloading history helps alleviate congestion because a receiver having such knowledge will not attempt to receive a high level video channel (e.g. channel B) if such an attempt will is known to generate a congestion condition resulting in a degradation of video signals received by, for example, other receivers in a common subnet. To successfully partition receiver history intelligence, it must be determined which eivers are affected when an add-layer expe [illegible] ned, what can be determined from a failed add-layer experiment, and *which receivers should learn from a failed add-layer experiment, i.e. to avoid an add attempt under similar circumstances similar to those of the failed attempt*.

(Ammar, col. 6, lines 23 – 38) Thus, Ammar teaches *receivers* that identify congestion conditions, maintain an add-layer history that results in congestion conditions, and utilize the add-layer history to avoid the congestion opinions. Importantly, Ammar's *routers* send video layers at the request of the receivers without identifying congested links. Because Krishnamachari is entirely silent on a video router as contemplated the claims, the proposed amendment is not taught or suggested by the prior art, rendering independent claim 1 nonobvious. Independent claims 8 and 15 were amended to recite substantially similar limitations; therefore, claims 8 and 15 are also nonobvious for the foregoing reasons. The remaining dependent claims are nonobvious by virtue of their dependency from one of claims 1, 8, and 15.

Previous argument notwithstanding, the claims 1, 5, 8, 11, 15, 17, and 18 are nonobvious because the proposed modification would change a principle of operation of the primary reference. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti,* 270 F.2d 810, 813, 123 USPQ 349, 352 (CCPA 1959)

For context, Krishnamachari describes a system and method for transmitting encoded video signals using variable rate modulation. (*See*, Krishnamachari, ¶ 2) Importantly, Krishnamachari teaches "a system for determining a priority of *each of a plurality of streams* of encoded video data; and a system for assigning a different modulation rate *to each stream* of encoded video data based on the determined priority." (Krishnamachari, Abstract) Thereafter, higher priority streams are transmitted with lower modulation rates and lower priority streams are transmitted with higher modulation rates. (*See*, Krishnamachari, Abstract; ¶ 20) Notably, all data streams are transmitted, albeit at different modulation rates. To emphasize the importance of transmitting *every* data stream, Krishnamachari describes the following exemplary scenario where video data lacks sufficient low priority data streams to achieve a target average modulation rate:

> [C]ontrol system 18 can continuously monitor [illegible] ing processed to determine if the target rate is being maintained, and cause scheme selection system 16 to make adjustments in the scheme selection process. For example, portions of a high priority stream could be sent using the low priority scheme (i.e., high rate) if there were not enough low priority streams available to meet the target rate.

(Krishnamachari, ¶ 21) As can be seen, rather than dropping low priority data streams so that all high priority streams can be sent with the lowest modulation rate, higher priority streams are instead sent at higher modulation rates so that all streams may be sent. Bandwidth is managed by sending all data streams, but with variable modulation rates so that an average transmission rate is maintained. Thus, the Examiner's proposed modification to drop one or more data streams changes a principle of operation of the primary reference.

The Examiner supports the obviousness rejection by asserting that the combination of references would "save bandwidth by not sending unimportant enhancement layers at all (as opposed to low priority in Krishnamachari)." (Final Office Action dated December 28, 2016, at p. 3) However, this argument is untenable because Krishnamachari already acknowledges that, although the exemplary embodiment of its variable rate modulation scheme is described with reference to "high" and "low" priority, other embodiments can be implementing using priorities such as "very high, high, low, and very low." (*See*, Krishnamachari at ¶ 16) First, the "very low" priority described by Krishnamachari is analogous to the Examiner's proposed "unimportant" priority that would nevertheless be assigned a high modulation rate and transmitted along with the other data streams. Second, the designation of an "unimportant" priority is still a priority, and according to Krishnamachari, each data stream that is assigned a priority is sent with an appropriate modulation rate, and the unimportant priority would be transmitted at the highest modulation rate.

Because the Examiner's proposed modification would change a principle of operation of the primary reference, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. Applicant respectfully requests reconsideration and withdrawal of the obviousness rejections for at least this additional reason.

Claim Rejections – 35 USC § 103(a)

[illegible] 7, 12-14, 19, 20, 21 are rejected under pre-[illegible])3(a) as being [illegible] ›ver Krishnamachari (US 2003/0072376) in view of Ammar (US 6,215,766) in view of Li (US 2004/0071083).

Response

As previously discussed, the amendment to the independent claims clarifies a distinction not taught or suggested by the combination of Krishnamachari and Ammar. Because Li fails to cure the amended limitation, independent claims 1, 8, and 15 are also nonobvious over the combination of Krishnamachari, Ammar, and Li. Dependent claims 5 – 7, 12 – 14, 19, 20, and 21 are nonobvious by virtue of their dependency from one of claims 1, 8, and 15. Applicant respectfully requests reconsideration and withdrawal of the corresponding rejection.

CONCLUSION

It is respectfully urged that the subject application is patentable over the references cited by Examiner and is now in condition for allowance. Applicants request consideration of the application and allowance of the claims. If there are any outstanding issues that the Examiner feels may be resolved by way of a telephone conference, the Examiner is cordially invited to contact Stephen Y. Liu or Vincent J. Allen at 972-367-2001.

The Commissioner is hereby authorized to charge any additional payments that may be due for additional claims to Deposit Account 50-0392.

Respectfully submitted,

By: /Stephen Y. Liu Reg. No. 62883/
Stephen Y. Liu
Registration No. 62883
Attorney for Applicant

Date: April 28, 2017

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(972) 367-2001 Telephone
(972) 367-2002 Facsimile

Electronic Patent Application Fee Transmittal

Application Number:	15010573
Filing Date:	29-Jan-2016
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Filer:	Stephen Y. Liu/Alycia Simpson
Attorney Docket Number:	GPB1-US9

Filed as Large Entity

Filing Fees for **Utility under 35 USC 111(a)**

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 1 month with $0 paid	1251	1	200	200
Miscellaneous:				
RCE- 1st Request	1801	1	1200	1200
	Total in USD ($)			**1400**

Electronic Acknowledgement Receipt

EFS ID:	29060388
Application Number:	15010573
International Application Number:	
Confirmation Number:	9731
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Customer Number:	122200
Filer:	Stephen Y. Liu/Alycia Simpson
Filer Authorized By:	Stephen Y. Liu
Attorney Docket Number:	GPB1-US9
Receipt Date:	28-APR-2017
Filing Date:	29-JAN-2016
Time Stamp:	16:14:14
Application Type:	Utility under 35 USC 111(a)

ion:

nt	yes
Payment Type	CARD
Payment was successfully received in RAM	$1400
RAM confirmation Number	050117INTEFSW16152900
Deposit Account	500392
Authorized User	Toni Watkins

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)
37 CFR 1.20 (Post Issuance fees)
37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	GPB1US9_RCE.pdf	1350115 cd78908e61d725e557d3365d13eaa9feadda2c44	no	3
Warnings:					
Information:					
2	Amendment Submitted/Entered with Filing of CPA/RCE	GPB1US9_RCE_Amendment_as_filed.pdf	124795 08dc8f514a32b8cdc6d7ad49d7502cc37b20a2ba	no	13
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	32981 b3b8a886496b4359f52bcf5b7d35b5adb1c82577	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1507891		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
nter the national stage of an international appl . nt with the conditions of 35 pplicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/010,573	Filing Date 01/29/2016	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	NUMBER FILED (Column 1)	NUMBER EXTRA (Column 2)	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	04/28/2017	CLAIMS REMAINING AFTER AMENDMENT (Column 1)		HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2)	PRESENT EXTRA (Column 3)	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 21	Minus	** 21	= 0	x $40 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	x $210 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	**0**

OMENT		CLAIMS REMAINING AFTER AMENDMENT (Column 1)		HIGHEST NUMBER PREVIOUSLY PAID FOR (Column 2)	PRESENT EXTRA (Column 3)	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	CFR 1.16(s))						
	☐ ON OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

SLIE
DIANIECE JACOBS

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/010,573	01/29/2016	Erik Van Zijst	GPB1-US9	9731

122200 7590 06/28/2017
Carstens & Cahoon, LLP
P.O. Box 802334
Dallas, TX 75380

EXAMINER	
HONG, MICHAEL HYUN	

ART UNIT	PAPER NUMBER
2426	

NOTIFICATION DATE	DELIVERY MODE
06/28/2017	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

panoptis@cclaw.com
docketing@panoptis.com

PTOL-90A (Rev. 04/07)

Office Action Summary	**Application No.** 15/010,573	**Applicant(s)** VAN ZIJST, ERIK	
	Examiner MICHAEL HONG	**Art Unit** 2426	**AIA (First Inventor to File) Status** No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *4/28/17*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ______.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ______; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1,3-8,10-15 and 17-21* is/are pending in the application.

5a) Of the above claim(s) ______ is/are withdrawn from consideration.

6)☐ Claim(s) ______ is/are allowed.

7)☒ Claim(s) *1, 3-8, 10-15, 17-21* is/are rejected.

8)☐ Claim(s) ______ is/are objected to.

9)☐ Claim(s) ______ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on ______ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

pies of the priority documents have been recei No. ______.

of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date ______.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. ______ .

4) ☐ Other: ______.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 11-13) **Office Action Summary** Part of Paper No./Mail Date 20170622

The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/28/17 has been entered.

Claim Rejections - 35 USC § 102

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim(s) 1, 3, 4, 8, 10, 11 is/are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Li, W (US 6,275,531).

Regarding claim 1, 8, Li, W discloses a video router (server 50) comprising:

[illegible]*y*; and

A processor, wherein the processor executes instructions stored in the memory to cause the video router to:

Receive a layered video data stream including a base layer and a set of enhancement layers (col. 5 lines 30-67, col. 6 lines 1-20, fig. 1),

Identify congested links of a network between the video router and a video receiver(col. 5 lines 30-67, col. 6 lines 1-20, fig. 1),

Forward the base layer from the video router to a video receiver(col. 5 lines 30-67, col. 6 lines 1-20, fig. 1), and

Selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers through the congested links of the network based upon throughput in the congested links, and wherein the video router transmits the layered video data stream according to a selected network protocol(col. 5 lines 30-67, col. 6 lines 1-20, fig. 1).

Regarding claim 3, 10, Li, W discloses wherein the video router further selectively forwards the one or more of the set of enhancement layers based on video processing capabilities of the video receiver (col. 3 lines 27-43).

Regarding claim 4,11, Li, W discloses wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers (col. 5 lines 30-67, col. 6 lines 1-20).

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 5-7, 12-14, is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Li, W (US 6,275,531) in view of Li, Q (US 2004/0071083).

Regarding claim 5, 12, , Li, W does not specifically disclose wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

However, Li, Q discloses wherein each layer of the layered data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs ([0027, 0028, 0030]). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the packet identifiers of Li, Q into the system of Li, W in order to assign

ets to various layers in the encoding of data.

Regarding claim 6, 13, Li, W, in view of Li, Q disclose wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs, wherein the information received by the scalable video coding router is related to throughput in a portion of the communication channel linking the scalable video coding router and the video receiver endpoint, and wherein the information includes a request for retransmission of one or more packets from the layered video data stream ([0027, 0028, 0030] of Li, Q).

Regarding claim 7, 14, Li, W in view of Li, Q discloses wherein the selected network protocol is TCP/IP ([0049] of Li, Q).

Claim 15, 17, 18 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Li, W (US 6,275,531) in view of Honda (US 2006/0168632).

Regarding claim 15, Li, W discloses a video router (server 50) comprising:

A memory; and

A processor, wherein the processor executes instructions stored in the memory to cause the video router to:

Receive a layered video data stream including a base layer and a set of enhancement layers (col. 5 lines 30-67, col. 6 lines 1-20, fig. 1),

[illegible], congested links of a network between the video router and a video receiver(col. 5 lines 30-67, col. 6 lines 1-20, fig. 1),

Forward the base layer from the video router to a video receiver(col. 5 lines 30-67, col. 6 lines 1-20, fig. 1), and

Selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers through the congested links of the network based upon throughput in the congested links, and wherein the video router transmits the layered video data stream according to a selected network protocol(col. 5 lines 30-67, col. 6 lines 1-20, fig. 1).

However, Li, W does not disclose a set of video receivers, forwarding all the set of enhancement layers to any video receiver in the set of video receivers through uncongested links, and forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to any remaining video receiver in the set of video receivers through the congested links.

Honda discloses a set of video receivers, forwarding all the set of enhancement layers to any video receiver in the set of video receivers through uncongested links (*1 to N enhancement layers*), and forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to any remaining video receiver in the set of video receivers through the congested links ([0094-0097] *1 and 2 enhancement layers*). It would have been obvious to one of ordinary skill in the art to incorporate the multicasting of Honda into the system of Li, W in order to account for various bandwidth and bitrates.

ing claim 17, see the rejection of claim 3 and 16.

Regarding claim 18, see the rejection of claim 4 and 15.

Claim 19, 20, 21 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Li, W (US 6,275,531) in view of Honda (US 2006/0168632) in view of Li, Q (US 2004/0071083).

Regarding claim 19, see the rejection of claim 5 and 15.

Regarding claim 20, see the rejection of claim 6 and 15.

Regarding claim 21, see the rejection of claim 7 and 15.

Response to Arguments

Arguments are moot in view of new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL HONG whose telephone number is (571)270-1553. The examiner can normally be reached on M-F (10:30a-6:30p).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's [illegible]ser Goodarzi can be reached on (571)2[illegible]. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MICHAEL HONG/
Primary Examiner, Art Unit 2426

Notice of References Cited	Application/Control No. 15/010,573	Applicant(s)/Patent Under Reexamination VAN ZIJST, ERIK
	Examiner MICHAEL HONG	Art Unit 2426 — Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2004/0071083 A1	04-2004	Li, Qiong	H04N21/222	370/230
*	B	US-6,275,531 B1	08-2001	Li; Weiping	H04N21/6377	370/468
*	C	US-2006/0168632 A1	07-2006	Honda; Yoshimasa	H04N7/167	725/95
	D	US-				
	E	US-				
	F	US-				
	G	US-				
	H	US-				
	I	US-				
	J	US-				
	K	US-				
	L	US-				
	M	US-				

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office
PTO-892 (Rev. 01-2001) **Notice of References Cited** Part of Paper No. 20170622

Index of Claims	**Application/Control No.** 15010573	**Applicant(s)/Patent Under Reexamination** VAN ZIJST, ERIK
	Examiner MIKE HONG	**Art Unit** 2426

✓	**Rejected**	-	**Cancelled**	N	**Non-Elected**	A	**Appeal**
=	**Allowed**	÷	**Restricted**	I	**Interference**	O	**Objected**

☐ **Claims renumbered in the same order as presented by applicant** ☐ **CPA** ☐ **T.D.** ☐ **R.1.47**

CLAIM		**DATE**								
Final	Original	06/10/2016	12/21/2016	06/22/2017						
	1	✓	✓	✓						
	2	✓	✓	-						
	3	✓	✓	✓						
	4	✓	✓	✓						
	5	✓	✓	✓						
	6	✓	✓	✓						
	7	✓	✓	✓						
	8	✓	✓	✓						
	9	✓	✓	-						
	10	✓	✓	✓						
	11	✓	✓	✓						
	12	✓	✓	✓						
	13	✓	✓	✓						
	14	✓	✓	✓						
	15		✓	✓						
	16		✓	-						
	17		✓	✓						
	18		✓	✓						
	19		✓	✓						
	20		✓	✓						
	21		✓	✓						

U.S. Patent and Trademark Office

Part of Paper No. : 20170622

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1053	(scalable with router)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/03 15:09
S2	763	S1 and protocol	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/03 15:57
S3	0	WO-04010250-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 16:34
S4	2	WO-2004010250-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 16:34
S5	0	@ad<"20050126" and router same (enhancement$1 adj layer$1) same bandwidth same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 17:13
S6	4	@ad<"20050126" and router same (enhancement$1 adj layer$1) same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 17:20
S7	30	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 14:58
S8	11	S7 and priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10
S9	3	S8 and TCP	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10
S10	3	S8 and TCP$3	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10

S11	0	@ad<"20050126" and h04n21/2662.cpc	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:15
S12	842	@ad<"20050126" and h04n21/2662.cpc.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:15
S13	65	@ad<"20050126" and h04n21/234.cpc.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:16
S14	343	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:48
S15	30	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:48
S16	68	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scalable or scale) and priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:50
S17	15	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scalable or scale) same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:51
S18	21	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (processing)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:25
S19	0	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (receiver with power)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S20	0	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (receiver)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S21	27	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (display)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S22	71	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:29

S23	7	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1 same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:30
S25	2	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1 same priority and (retransmit or retransmission)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:31
S26	5	(US-20040198371-$ or US-20020006161-$ or US-20030072376-$ or US-20030206558-$ or US-20060164987-$).did.	US-PGPUB	OR	OFF	2016/06/12 12:33
S27	1	S26 and tcp	US-PGPUB	OR	OFF	2016/06/12 12:33
S28	7	@ad<"20050126" and (enhancement$1 adj layer$1) same packet$1 same priority and (retransmit or retransmission)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 13:06
S29	4	S28 and tcp	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 13:08
S30	762	@ad<"20050126" and (enhancement$1 adj layer$1) same video	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/20 14:38
S31	23	@ad<"20050126" and ((send or forward or transmit) near2 (enhancement$1 adj layer$1)) same video	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/20 14:39
S32	5	@ad<"20050126" and ((send or forward or transmit) near2 (enhancement$1 adj layer$1)) same processing	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/21 13:15
S33	3	("20060190641" | "4422171" | "6061399").PN.	US-PGPUB; USPAT	OR	OFF	2016/12/21 13:25
S34	7	("20030023746" | "20030152076" | "5432798" | "5926758" | "6426944" | "6621799" | "7151762").PN.	US-PGPUB; USPAT	OR	OFF	2016/12/21 13:25
		<"20050126" and (enhancement$1 adj ayer$1) same (congest$3 near (path$1 or ink$1))	US-PGPUB; USPAT; EPO; DERWENT		FF	2017/06/21 15:17
S36	31	@ad<"20050126" and (enhancement$1 adj layer$1) same (congest$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2017/06/21 15:17
S37	53	@ad<"20050126" and (enhancement$1 adj layer$1) with channel$1 with bandwidth	US-PGPUB; USPAT;	OR	OFF	2017/06/21 15:29

			EPO; DERWENT			
S38	31	@ad<"20050126" and (enhancement$1 adj layer$1) same (congest$4)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2017/06/21 15:31
S39	55	@ad<"20050126" and (enhancement$1 adj layer$1) and ((congest$4) with (path$1 or channel$1 or link$3))	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2017/06/21 15:34
S40	14	@ad<"20050126" and (enhancement$1 adj layer$1) and (layer$1 with (congest$4) with (path$1 or channel$1 or link$3))	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2017/06/21 16:03
S41	11	(US-20040198371-$ or US-20020006161-$ or US-20030072376-$ or US-20030206558-$ or US-20060164987-$ or US-20040071083-$ or US-20040264791-$ or US-20030195977-$ or US-20050175084-$).did. or (US-6215766-$ or US-6275531-$).did.	US-PGPUB; USPAT	OR	OFF	2017/06/22 11:24
S42	6	S41 and (congest$4)	US-PGPUB; USPAT	OR	OFF	2017/06/22 11:25

EAST Search History (Interference)

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6/22/2017 4:07:54 PM
C:\ Users\ hhong1\ Documents\ EAST\ Workspaces\ 15010573.wsp

Search Notes	**Application/Control No.** 15010573	**Applicant(s)/Patent Under Reexamination** VAN ZIJST, ERIK
	Examiner MIKE HONG	**Art Unit** 2426

CPC- SEARCHED

Symbol	Date	Examiner
h04n21/2662, h04n21/234	6/10/2016	MH

CPC COMBINATION SETS - SEARCHED

Symbol	Date	Examiner

US CLASSIFICATION SEARCHED

Class	Subclass	Date	Examiner

SEARCH NOTES

Search Notes	Date	Examiner
Inventorship search	6/10/2016	MH
east search	6/10/2016	MH
updated east search	12/21/2016	MH
updated east search	6/22/2017	MH

INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:	ZIJST, Eric Van
Applicant:	Blitz Stream Video, LLC
Serial Number:	15/010,573
Filing Date:	January 29, 2016
Title:	Layered Multicast and Fair Bandwidth Allocation and Packet Prioritization
Confirmation No.:	9731
Examiner:	HONG, Michael Hyun
Art Unit:	2426
Attorney File:	GPB1.US9

RESPONSE TO OFFICE ACTION MAILED JUNE 28, 2017

This paper is being filed responsive to an Office Action mailed June 28, 2017. Applicant notes that the three-month deadline for filing a response expired on September 28, 2017. Thus, this response is being filed with a request for a one-month Extension of Time to extend the response period to October 28, 2017, which falls on a Saturday so the deadline will roll over to Monday, October 30, 2017. No additional fees are believed to be due at this time. If however, additional fees are due, I authorize the Commissioner to charge these fees to Carstens & Cahoon LLP, Deposit Account No. 50-0392.

Amendments to the Claims are contained in the listing of the claims, which begins on page 2 of this paper.

ks/Arguments begin on page 8 of this paper.

Conclusion begins on page 12 of this paper.

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A video router comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to:

receive a layered video data stream including a base layer and a set of enhancement layers,

identify ~~congested~~ bandwidth-limited links of a network between the video router and a plurality of video receivers in a multicast,

forward the base layer from the video router to each of the plurality of [[a]] video receivers in the multicast, and

selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to one or more of the plurality of video receivers through the ~~congested~~ bandwidth-limited links of the network based upon throughput in the ~~congested~~ bandwidth-limited links, and wherein the video router transmits the layered video data stream according to a selected network protocol.

2. (Cancelled)

3. (Previously Presented) The video router of claim 1, wherein the video router further selectively forwards the one or more of the set of enhancement layers based on video processing capabilities of the video receiver.

4. (Previously Presented) The video router of claim 1, wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers.

5. (Previously Presented) The video router of claim 1, wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

6. (Previously Presented) The router of claim 5,

wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream.

7. (Previously Presented) The video router of claim 1, wherein the selected network protocol is TCP/IP.

8. (Currently Amended) A method for transmitting video signals comprising:

receiving a layered video data stream comprising a base layer and a set of enhancement layers;

identifying ~~congested~~ bandwidth-limited links of a network between a video router and a plurality of video receivers in a multicast;

forwarding the base layer to each of the plurality of [[the]] video receivers in the multicast; and

selectively forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to one or more of the plurality of video receivers through the ~~congested~~ bandwidth-limited links of the network based upon throughput in the ~~congested~~ bandwidth-limited links;

wherein the layered video data stream is transmitted via a communications channel [illegible] elected network protocol.

9. (Cancelled)

10. (Previously Presented) The method of claim 8, wherein the selectively forwarding step further comprises:

selectively forwarding the one or more of the set of enhancement layers based on video processing capabilities of the video receiver.

11. (Previously Presented) The method of claim 8, further comprising:

dividing available bandwidth among a plurality of data streams; and

prioritizing the set of enhancement layers for the selectively forwarding step.

12. (Previously Presented) The method of claim 8, wherein each layer of the layered video data stream comprises data packets, the method further comprising:

encoding a sequence number and a priority identifier in each of the data packets, wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

13. (Previously Presented) The method of claim 12, wherein the selectively forwarding step further comprises:

selectively forwarded the one or more of the set of enhancement layers based on a request for retransmission of one or more data packets from the layered video data stream.

14. (Original) The method of claim 8, wherein the selected network protocol is TCP/IP.

15. (Currently Amended) A video router comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to:

receive a layered video data stream that comprises a base layer and a set of enhancement layers,

identify ~~congested~~ bandwidth-limited links of a network between the video router and a set of video receivers in a multicast;

forward the base layer from the video router to each of the set of video receivers in the multicast; and

wherein the video router forwards all of the set of enhancement layers to any video receiver in the set of video receivers through bandwidth-sufficient ~~uncongested~~ links,

wherein the scalable video coding router selectively forwards one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to any remaining video receiver in the set of video receivers through the ~~congested~~ bandwidth-limited links based upon throughput in the ~~congested~~ bandwidth-limited links; and

wherein the layered video data stream is transmitted according to a selected network protocol.

16. (Cancelled)

17. (Previously Presented) The video router of claim 15, wherein the video router further selectively forwards the one or more of the set of enhancement layers based on video processing [illegible] h of the set of video receivers.

18. (Previously Presented) The video router of claim 15, wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers.

19. (Previously Presented) The video router of claim 15, wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

20. (Previously Presented) The video router of claim 19,

wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream.

21. (Previously Presented) The video router of claim 15, wherein the selected network protocol is TCP/IP.

22. (New) The video router of claim 1, further comprising:

a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router.

23. (New) The method of claim 8, wherein the layered video data stream is received from another video router.

24. (New) The video router of claim 15, further comprising:

a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router.

REMARKS

Claims 1, 3-8, 10-15 and 17-24 are currently pending in the present application. Claims 2, 9, 16 were previously canceled. By this response, claims 1, 8, and 15 are amended and claims 22, 23, and 24 are added. Support for the amendment of claims can be found in the claims as originally written, and in the Orig. Spec. at least in paragraph 2. Support for new claims 22-24 can be found in the Orig. Spec. at ¶ 27.

No claims have been canceled, or withdrawn herein. No new matter is added.

Applicants have carefully studied the outstanding Office Action. The present Response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of this application is respectfully requested. Applicants respectfully request reconsideration and withdrawal of the Examiner's rejections in view of the foregoing amendments and following remarks.

Claim Rejections - 35 USC § 102

Claims 1, 3, 4, 8, 10 and 11

Claims 1, 3, 4, 8, 10 and 11 are rejected under pre-AIA 35 USC 102(b) as being anticipated by Li, W (US 6,275,531).

Response

Independent claims 1 and 8, as amended, recite limitations not disclosed by the Li, W. Therefore, claims 1 and 8 are not anticipated by the cited art. For example, claim 1 has been amended as follows:

1. A video router comprising:
   a memory; and
   a processor, wherein the processor executes instructions
   stored in the memory to cause the video router to:
   receive a layered video data stream including a base layer
      and a set of enhancement layer;
   identify ~~congested~~ bandwidth-limited links of a network
      between the video router and a plurality of video
      receivers in a multicast,
   forward the base layer from the video router to each of the
      plurality of [[a]] video receivers, and
   selectively forward one or more of the set of enhancement
      layers, but fewer than all of the set of enhancement

> layers to one or more of the plurality of video receivers through the ~~congested~~ bandwidth-limited links of the network based upon throughput in the ~~congested~~ bandwidth-limited links, and wherein the video router transmits the layered video data stream according to a selected network protocol.

Independent claim 1 has been amended to recite that video router comprises a processor that executes instructions to cause the video router to identify bandwidth-limited links of a network between the video router and a plurality of video receives in a multicast, then forward the base layer from the video router to each of the plurality of video receivers in the multicast. The Li W. reference fails to teach "forwarding the base layer from the video router to each of the plurality of video receivers in the multicast," instead teaching that a number of enhancement layers is "determined or limited by the network that provides the transmission channel to **the destination point**." (Li W., at col. 3, lines 17 – 20, emphasis added) Further, "the transmission channel may be the limiting factor because of the bandwidth of the channel…or **the destination device** itself." (Li W., at col. 3, lines 33 – 37, emphasis added) Moreover, the destination point is depicted as a singular receiver. Thus, Li W teaches a unicast transmission to a single destination device rather than a multicast transmission to a plurality of receivers, as recited in claim 1.

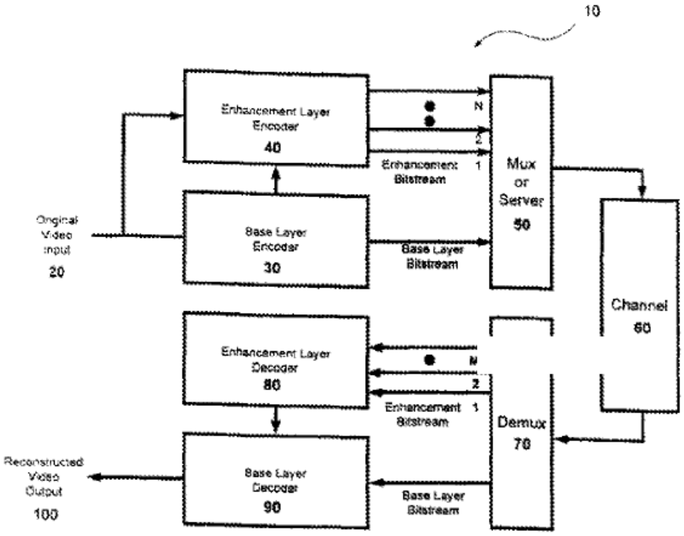
10
Enhancement Layer Encoder
40
N
2
1
Enhancement Bitstream
Mux or Server
50
Original Video Input
20
Base Layer Encoder
30
Base Layer Bitstream
Channel
60
Enhancement Layer Decoder
80
N
2
1
Enhancement Bitstream
Demux
70
Reconstructed Video Output
100
Base Layer Decoder
90
Base Layer Bitstream

FIG 1

For at least this reason, independent claim 1 is novel over the Li W. reference. Independent claim 8 has been amended with substantially the same limitations of claim 1; therefore, claim 8 is also novel for substantially the same reason. Dependent claims 3, 4, 10, and 11 are novel by virtue of their dependency from one of independent claims 1 and 8. Applicant respectfully requests reconsideration and withdrawal of the corresponding rejections.

Claim Rejections - 35 USC § 103

Claims 5-7, 12-14

Claims 5-7, 12-14 are rejected under pre-AIA 35 USC 103(a) as being unpatentable over Li, W (U.S. 6,275,531) in view of Li, Q (U.S. 2004/0071083).

Response

Amended claims 1 and 8 disclose limitations not taught by Li W. Because Li Q fails to cure those deficiencies, independent claims 1 and 8 are novel and nonobvious over the combination of references. Dependent claims 5-7 and 12-14 are nonobvious by virtue of their dependency from one of claims 1 and 8. Applicant respectfully requests reconsideration and withdrawal of the corresponding rejections.

Claims 15, 17 and 18

Claims 15, 17 and 18 are rejected under pre-AIA 35 USC 103(a) as being unpatentable over Li, W (U.S. 6,275,531) in view of Honda (U.S. 2006/0168632).

Response

Independent claim 15 was amended with substantially the same limitations as in independent claim 1. As previously argued, Li W fails to teach those limitations. Likewise, Honda also fails to teach the limitation of "*forwarding* the base layer from the video router to each of the plurality of video receivers in the multicast." Instead, Honda teaches a video transmitting

simply *generates* the layered video stream layered video

ver, claim 1 recites forwarding **the** base layer…to each of the plurality of video receivers in multicast. In contrast, Honda teaches generating and transmitting base layers with different bit rates "due to terminal movement and so forth." (Honda, ¶ 44) Restated, Honda transmits a customized base layer to each video receiver based on individual criteria that includes, among other things, terminal movement. (*See*, Honda, ¶ 44, ¶ 98, ¶ 112)

For the reasons set forth above, independent claim 15 is nonobvious over the combination of Li, W. and Honda. Dependent claims 17 and 18 are nonobvious by virtue of their dependency from claim 15. Applicant respectfully requests reconsideration and withdrawal of the corresponding rejections.

Claims 19, 20 and 21

Claims 19, 20 and 21 are rejected under pre-AIA 35 USC 103(a) as being unpatentable over Li, W (U.S. 6,275,531) in view of Honda (U.S. 2006/0168632) in view of Li, Q (U.S. 2004/0071083).

Response

Amended claim 15 discloses limitations not taught by Li W. and Honda. Because Li Q. fails to cure those deficiencies, independent claim 15 is nonobvious over the combination of references. Dependent claims 19, 20, and 21 are nonobvious by virtue of their dependency from claim 15. Applicant respectfully requests reconsideration and withdrawal of the corresponding rejections.

CONCLUSION

It is respectfully urged that the subject application is patentable over the references cited by Examiner and is now in condition for allowance. Applicant request consideration of the application and allowance of the claims. If there are any outstanding issues that the Examiner feels may be resolved by way of a telephone conference, the Examiner is cordially invited to contact Stephen Y. Liu or Vincent J. Allen at 972-367-2001.

The Commissioner is hereby authorized to charge any additional payments that may be due or credit any overpayments to Carstens & Cahoon, LLP Deposit Account 50-0392.

Respectfully submitted,

By: /Stephen Y. Liu/
Stephen Y. Liu
Registration No. 62883
Attorney for Applicant

Date: October 30, 2017

CARSTENS & CAHOON, LLP
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(972) 367-2002 Facsimile

Electronic Patent Application Fee Transmittal

Application Number:	15010573
Filing Date:	29-Jan-2016
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Filer:	Stephen Y. Liu/Jana Sanders
Attorney Docket Number:	GPB1-US9

Filed as Small Entity

Filing Fees for **Utility under 35 USC 111(a)**

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 1 month with $0 paid	2251	1	100	100
Miscellaneous:				
		Total in USD ($)		**100**

Electronic Acknowledgement Receipt

EFS ID:	30793144
Application Number:	15010573
International Application Number:	
Confirmation Number:	9731
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Customer Number:	122200
Filer:	Stephen Y. Liu/Jana Sanders
Filer Authorized By:	Stephen Y. Liu
Attorney Docket Number:	GPB1-US9
Receipt Date:	30-OCT-2017
Filing Date:	29-JAN-2016
Time Stamp:	11:28:01
Application Type:	Utility under 35 USC 111(a)

ion:

nt	yes
Payment Type	CARD
Payment was successfully received in RAM	$100
RAM confirmation Number	103017INTEFSW11312300
Deposit Account	500392
Authorized User	Jana Sanders

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)
37 CFR 1.20 (Post Issuance fees)
37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	GPB1US9_ROA.pdf	145590 bf223be1170ac9e499f75c25ea9277a7efc4f f2b	no	11
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30908 7133e1d72eb74069658cc20c01e441f6aed 3ce7d	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	176498		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/010,573	Filing Date 01/29/2016	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	10/30/2017	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 21	Minus	** 21	= 0	x $40 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	x $210 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	**0**

OMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x $ =	
	CFR 1.16(s))						
	ON OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
DEBORAH POLLARD

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/010,573	01/29/2016	Erik Van Zijst	GPB1-US9	9731

122200 7590 02/08/2018
Carstens & Cahoon, LLP
P.O. Box 802334
Dallas, TX 75380

EXAMINER	
HONG, MICHAEL HYUN	

ART UNIT	PAPER NUMBER
2426	

NOTIFICATION DATE	DELIVERY MODE
02/08/2018	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

panoptis@cclaw.com
docketing@panoptis.com

PTOL-90A (Rev. 04/07)

Office Action Summary	**Application No.** 15/010,573	**Applicant(s)** VAN ZIJST, ERIK	
	Examiner MICHAEL HONG	**Art Unit** 2426	**AIA (First Inventor to File) Status** No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on ______.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ______.
2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.
3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ______; the restriction requirement and election have been incorporated into this action.
4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1,3-8,10-15 and 17-24* is/are pending in the application.
5a) Of the above claim(s) ______ is/are withdrawn from consideration.
6)☐ Claim(s) ______ is/are allowed.
7)☒ Claim(s) *1, 3-8, 10-15, 17-24* is/are rejected.
8)☐ Claim(s) ______ is/are objected to.
9)☐ Claim(s) ______ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.
11)☐ The drawing(s) filed on ______ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a)☐ All b)☐ Some** c)☐ None of the:
1.☐ Certified copies of the priority documents have been received.
pies of the priority documents have been recei No. ______.
of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date ______.
3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. ______ .
4) ☐ Other: ______.

The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim(s) 1, 3, 4, 8, 10, 11 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Li, W (US 6,275,531) in view of Lin (US 2005/0185714).

Regarding claim 1, 8, Li, W discloses a video router (server 50) comprising:

A memory; and

A processor, wherein the processor executes instructions stored in the memory to cause the video router to:

Receive a layered video data stream including a base layer and a set of

t layers (col. 5 lines 30-67, col. 6 lines 1-20, fig. 1),

Identify bandwidth-limited links of a network between the video router and a video receiver(col. 5 lines 30-67, col. 6 lines 1-20, fig. 1),

Forward the base layer from the video router to a video receiver(col. 5 lines 30-67, col. 6 lines 1-20, fig. 1), and

Selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers through the bandwidth limited links of the network based upon throughput in the bandwidth-limited links, and wherein the video router transmits the layered video data stream according to a selected network protocol(col. 5 lines 30-67, col. 6 lines 1-20, fig. 1).

Li, W does not specifically disclose a plurality of video receivers in a multicast, forwarding base layer to each of the receivers in the multicast, selectively forwarding one or more of the set of enhancement layers to one or more of the plurality of video receivers.

However, Lin discloses a plurality of video receivers in a multicast, forwarding base layer to each of the receivers in the multicast, selectively forwarding one or more of the set of enhancement layers to one or more of the plurality of video receivers ([0005]). It would have been obvious to incorporate the multicast FGS system of Lin into the system of Li, W in order to apply scalable video into a multicast system.

Regarding claim 3, 10, Li, W discloses wherein the video router further selectively forwards the one or more of the set of enhancement layers based on video capabilities of the video receiver (col. 3 lines 27-40).

Regarding claim 4,11, Li, W discloses wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers (col. 5 lines 30-67, col. 6 lines 1-20).

Claim 5-7, 12-14, is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Li, W (US 6,275,531) in view of Lin (US 2005/0185714) in view of Li, Q (US 2004/0071083).

Regarding claim 5, 12, , Li, W in view of Lin does not specifically disclose wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

However, Li, Q discloses wherein each layer of the layered data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs ([0027, 0028, 0030]). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the packet identifiers of Li, Q into the system of Li, W in view of Lin in order to assign specific packets to various layers in the encoding of data.

Regarding claim 6, 13, Li, W, in view of Lin in view of Li, Q disclose wherein [illegible] the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs, wherein the information received by the scalable video coding router is related to throughput in a portion of the communication channel linking the scalable video coding router and the video receiver endpoint, and wherein the information includes a request for retransmission of one or more packets from the layered video data stream ([0027, 0028, 0030] of Li, Q).

Regarding claim 7, 14, Li, W in view of Lin in view of Li, Q discloses wherein the selected network protocol is TCP/IP ([0049] of Li, Q).

Claim 15, 17, 18 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Li, W (US 6,275,531) in view of Honda (US 2006/0168632) in view of Lin (US 2005/0185714).

Regarding claim 15, Li, W discloses a video router (server 50) comprising:

A memory; and

A processor, wherein the processor executes instructions stored in the memory to cause the video router to:

Receive a layered video data stream including a base layer and a set of enhancement layers (col. 5 lines 30-67, col. 6 lines 1-20, fig. 1),

Identify bandwidth-limited links of a network between the video router and a

[illegible] (col. 5 lines 30-67, col. 6 lines 1-20, fig. 1),

Forward the base layer from the video router to a video receiver(col. 5 lines 30-67, col. 6 lines 1-20, fig. 1), and

Selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers through the bandwidth-limited links of the network based upon throughput in the bandwidth-limited links, and wherein the video router transmits the layered video data stream according to a selected network protocol(col. 5 lines 30-67, col. 6 lines 1-20, fig. 1).

However, Li, W does not disclose a set of video receivers, forwarding all the set of enhancement layers to any video receiver in the set of video receivers through bandwidth-sufficient links, and forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to any remaining video receiver in the set of video receivers through the bandwidth-limited links.

Honda discloses a set of video receivers, forwarding all the set of enhancement layers to any video receiver in the set of video receivers through bandwidth sufficient links (*1 to N enhancement layers*), and forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to any remaining video receiver in the set of video receivers through the bandwidth-limited links ([0094-0097] *1 and 2 enhancement layers*). It would have been obvious to one of ordinary skill in the art to incorporate the multicasting of Honda into the system of Li, W in order to account for various bandwidth and bitrates.

... view of Honda does not specifically disclose a plurality of video receivers in a multicast, forwarding base layer to each of the receivers in the multicast, selectively forwarding one or more of the set of enhancement layers to one or more of the plurality of video receivers.

However, Lin discloses a plurality of video receivers in a multicast, forwarding base layer to each of the receivers in the multicast, selectively forwarding one or more of the set of enhancement layers to one or more of the plurality of video receivers ([0005]). It would have been obvious to incorporate the multicast FGS system of Lin into the system of Li, W in view of Honda in order to apply scalable video into a multicast system.

Regarding claim 17, see the rejection of claim 3 and 15.

Regarding claim 18, see the rejection of claim 4 and 15.

Claim 19, 20, 21 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Li, W (US 6,275,531) in view of Honda (US 2006/0168632) in view of Lin (US 2005/0185714) in view of Li, Q (US 2004/0071083).

Regarding claim 19, see the rejection of claim 5 and 15.

Regarding claim 20, see the rejection of claim 6 and 15.

Regarding claim 21, see the rejection of claim 7 and 15.

Claim(s) 22-23 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Li, W (US 6,275,531) in view of Lin (US 2005/0185714) in view of Radha (US [illegible]).

Regarding claim 22, Li, W in view of Lin does not specifically disclose a communications link connecting the video router with a tleast a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router.

However, Radha discloses disclose a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router (fig. 4, fig. 6, [0035-0036]). It would have been obvious to incorporate the multiple routers of Radha into the system of Li, W in view of Lin in order to properly transmit the data stream in a multicasting network.

Regarding claim 23, Li, W in view of Lin in view of Radha discloses wherein the layered video data stream is received from another video router (fig. 4, fig. 6, [0035-0036] of Radha).

Claim 24 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Li, W (US 6,275,531) in view of Honda (US 2006/0168632) in view of Lin (US 2005/0185714) in view of Radha (US 2004/0139219).

Regarding claim 24, see the rejection of claim 22.

Response to Arguments

Arguments are moot in view of new grounds of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL HONG whose telephone number is (571)270-1553. The examiner can normally be reached on M-F (10:30a-6:30p).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's [illegible]ser Goodarzi can be reached on (571)2[illegible]. [illegible] fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MICHAEL HONG/
Primary Examiner, Art Unit 2426

Notice of References Cited	Application/Control No. 15/010,573	Applicant(s)/Patent Under Reexamination VAN ZIJST, ERIK
	Examiner MICHAEL HONG	Art Unit 2426 · Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2004/0071083 A1	04-2004	Li, Qiong	H04N21/222	370/230
*	B	US-6,275,531 B1	08-2001	Li; Weiping	H04N21/6377	370/468
*	C	US-2006/0168632 A1	07-2006	Honda; Yoshimasa	H04N7/167	725/95
*	D	US-2005/0185714 A1	08-2005	Lin, Chia-Wen	H04N19/105	375/240.12
*	E	US-2004/0139219 A1	07-2004	Radha, Hayder	H04N21/234327	709/234
	F	US-				
	G	US-				
	H	US-				
	I	US-				
	J	US-				
	K	US-				
	L	US-				
	M	US-				

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office
PTO-892 (Rev. 01-2001) **Notice of References Cited** Part of Paper No. 20180205

Index of Claims	**Application/Control No.** 15010573	**Applicant(s)/Patent Under Reexamination** VAN ZIJST, ERIK
	Examiner MIKE HONG	**Art Unit** 2426

✓	**Rejected**		**-**	**Cancelled**		**N**	**Non-Elected**		**A**	**Appeal**
=	**Allowed**		**÷**	**Restricted**		**I**	**Interference**		**O**	**Objected**

☐ **Claims renumbered in the same order as presented by applicant** ☐ **CPA** ☐ **T.D.** ☐ **R.1.47**

CLAIM		**DATE**								
Final	Original	06/10/2016	12/21/2016	06/22/2017	02/05/2018					
	1	✓	✓	✓	✓					
	2	✓	✓	-	-					
	3	✓	✓	✓	✓					
	4	✓	✓	✓	✓					
	5	✓	✓	✓	✓					
	6	✓	✓	✓	✓					
	7	✓	✓	✓	✓					
	8	✓	✓	✓	✓					
	9	✓	✓	-	-					
	10	✓	✓	✓	✓					
	11	✓	✓	✓	✓					
	12	✓	✓	✓	✓					
	13	✓	✓	✓	✓					
	14	✓	✓	✓	✓					
	15		✓	✓	✓					
	16		✓	-	-					
	17		✓	✓	✓					
	18		✓	✓	✓					
	19		✓	✓	✓					
	20		✓	✓	✓					
	21		✓	✓	✓					
	22				✓					
	23				✓					
	24				✓					

U.S. Patent and Trademark Office

Part of Paper No. : 20180205

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	37	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same multicast$3	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/02/05 11:35
L2	4	("6275531" "20040071083").pn.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/02/05 11:53
L3	0	2 and router$1	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/02/05 11:54
L4	2	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same multicast$3 same router$1	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/02/05 11:56
S1	1053	(scalable with router)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/03 15:09
S2	763	S1 and protocol	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/03 15:57
S3	0	WO-04010250-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 16:34
S4	2	WO-2004010250-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 16:34
S5	0	@ad<"20050126" and router same (enhancement$1 adj layer$1) same bandwidth same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 17:13
S6	4	@ad<"20050126" and router same (enhancement$1 adj layer$1) same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 17:20
S7	30	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 14:58
S8	11	S7 and priority	US-PGPUB; USPAT; E DERWENT	OR	OFF	2016/06/10 15:10
S9	3	S8 and TCP	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10
S10	3	S8 and TCP$3	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10
S11	0	@ad<"20050126" and h04n21/2662.cpc	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:15
S12	842	@ad<"20050126" and h04n21/2662.cpc.	US-PGPUB;	OR	OFF	2016/06/10

			USPAT; EPO; DERWENT			15:15
S13	65	@ad<"20050126" and h04n21/234.cpc.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:16
S14	343	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:48
S15	30	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:48
S16	68	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scalable or scale) and priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:50
S17	15	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scalable or scale) same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:51
S18	21	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (processing)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:25
S19	0	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (receiver with power)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S20	0	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (receiver)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S21	27	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (display)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S22	71	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:29
S23	7	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1 same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:30
S25	2	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1 same priority and (retransmit or retransmission)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:31
S26	5	(US-20040198371-$ or US-20020006161-$ or US-20030072376-$ or US-20030206558-$ or US-20060164987-$).did.	US-PGPUB	OR	OFF	2016/06/12 12:33
S27	1	S26 and tcp	US-PGPUB	OR	OFF	2016/06/12 12:33
		@ad<"20050126" and (enhancement$1 adj layer$1) same packet$1 same priority and (retransmit or retransmission)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 13:06
S29	4	S28 and tcp	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 13:08
S30	762	@ad<"20050126" and (enhancement$1 adj layer$1) same video	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/20 14:38
S31	23	@ad<"20050126" and ((send or forward or transmit) near2 (enhancement$1 adj	US-PGPUB; USPAT; EPO;	OR	OFF	2016/12/20 14:39

		layer$1)) same video	DERWENT			
S32	5	@ad<"20050126" and ((send or forward or transmit) near2 (enhancement$1 adj layer$1)) same processing	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/21 13:15
S33	3	("20060190641" | "4422171" | "6061399").PN.	US-PGPUB; USPAT	OR	OFF	2016/12/21 13:25
S34	7	("20030023746" | "20030152076" | "5432798" | "5926758" | "6426944" | "6621799" | "7151762").PN.	US-PGPUB; USPAT	OR	OFF	2016/12/21 13:25
S35	2	"6275531".pn.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2017/09/08 10:35

EAST Search History (Interference)

<This search history is empty>

2/5/2018 12:27:36 PM
C:\Users\hhong1\Documents\EAST\Workspaces\15010573.wsp

Search Notes	**Application/Control No.** 15010573	**Applicant(s)/Patent Under Reexamination** VAN ZIJST, ERIK
	Examiner MIKE HONG	**Art Unit** 2426

CPC- SEARCHED

Symbol	Date	Examiner
h04n21/2662, h04n21/234	6/10/2016	MH

CPC COMBINATION SETS - SEARCHED

Symbol	Date	Examiner

US CLASSIFICATION SEARCHED

Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

SEARCH NOTES

Search Notes	Date	Examiner
Inventorship search	6/10/2016	MH
east search	6/10/2016	MH
updated east search	12/21/2016	MH
updated east search	6/22/2017	MH
updated east search	2/5/2018	MH

INTERFERENCE SEARCH

CPC Symbol	US Subclass / CPC Group	Date	Examiner

PTO/AIA/31 (03-14)
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NOTICE OF APPEAL FROM THE EXAMINER TO THE PATENT TRIAL AND APPEAL BOARD

Docket Number (Optional)
GPB1-US9

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Signature /Jana Sanders/
Typed or printed name Jana Sanders

In re Application of ZIJST, Erik Van	
Application Number 15/010,573	Filed January 29, 2016
For Layered Multicast and Fair Bandwidth Allocation and Packet Prioritization	
Art Unit 2426	Examiner HONG, Michael Hyun

Applicant hereby **appeals** to the Patent Trial and Appeal Board from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) $ 800.00

☑ Applicant asserts small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by 50%, and the resulting fee is: $ 400.00

☐ Applicant certifies micro entity status. See 37 CFR 1.29. Therefore, the fee shown above is reduced by 75%, and the resulting fee is: $ ____
Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 50-0392.

☑ Payment made via EFS-Web.

☐ A petition for an extension of time under 37 CFR 1.136(a) (PTO/AIA/22 or equivalent) is enclosed.
For extensions of time in reexamination proceedings, see 37 CFR 1.550.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant

☑ attorney or agent of record
Registration number 62,883

☐ attorney or agent acting under 37 CFR 1.34
Registration number ____

Signature /Stephen Y. Liu/
Typed or printed name Stephen Y. Liu
Telephone Number 972-367-2001
Date May 8, 2018

igned in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signat rtifications. Submit multiple
nature is required, see below*.

☑ * Total of ____ forms are submitted.

This collection of information is required by 37 CFR 41.20(b)(1) and 41.31. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
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Electronic Patent Application Fee Transmittal

Application Number:	15010573
Filing Date:	29-Jan-2016
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Filer:	Stephen Y. Liu/Jana Sanders
Attorney Docket Number:	GPB1-US9

Filed as Small Entity

Filing Fees for **Utility under 35 USC 111(a)**

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Petition:				
Patent-Appeals-and-Interference:				
NOTICE OF APPEAL	2401	1	400	400
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		400

Electronic Acknowledgement Receipt

EFS ID:	32549658
Application Number:	15010573
International Application Number:	
Confirmation Number:	9731
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Customer Number:	122200
Filer:	Stephen Y. Liu/Jana Sanders
Filer Authorized By:	Stephen Y. Liu
Attorney Docket Number:	GPB1-US9
Receipt Date:	08-MAY-2018
Filing Date:	29-JAN-2016
Time Stamp:	06:29:11
Application Type:	Utility under 35 USC 111(a)

ion:

nt	yes
Payment Type	CARD
Payment was successfully received in RAM	$400
RAM confirmation Number	050818INTEFSW06304900
Deposit Account	500392
Authorized User	Jana Sanders

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)
37 CFR 1.20 (Post Issuance fees)
37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Notice of Appeal Filed	GPB1US9_Notice_of_Appeal.pdf	256208 ae0ff337642ec623f6232953dc9bc183117b1724	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30619 816529aceabbdf2bdc1440823c21c5b81a4dcbf9	no	2
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National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:	ZIJST, Eric Van
Applicant:	Blitz Stream Video, LLC
Serial Number:	15/010,573
Filing Date:	January 29, 2016
Title:	Layered Multicast and Fair Bandwidth Allocation and Packet Prioritization
Confirmation No.:	9731
Examiner:	HONG, Michael Hyun
Art Unit:	2426
Attorney File:	GPB1.US9

APPELLANT'S BRIEF (37 C.F.R. § 41.37)

This brief is in furtherance of the Notice of Appeal, filed in this case on May 8, 2018. A one month extension of time is believed to be necessary, which requires a fee of $100.00. If, however, any additional fees are required, I authorize the Commissioner to charge these fees to Carstens & Cahoon LLP, Deposit Account No. 50-0392.

I. REAL PARTIES IN INTEREST (37 C.F.R. § 41.37(c)(1)(i))

The real party in interest in this appeal is the following party: Blitz Stream Video, LLC

II. RELATED APPEALS AND INTERFERENCES (37 C.F.R. § 41.37(c)(1)(ii))

With respect to other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal, there are no such appeals or interferences.

III. STATUS OF CLAIMS

A. TOTAL NUMBER OF CLAIMS IN APPLICATION

Claims in the application are: 1-24.

B. STATUS OF ALL THE CLAIMS IN APPLICATION

1. Claims pending: 1, 3-8, 10-15, and 17-24.
2. Claims previously cancelled: 2 and 9.
3. Claims withdrawn: None.
4. Claims rejected: 1, 3-8, 10-15, and 17-24.
5. Claims allowed: None.
6. Claims cancelled in accompanying amendment: None.

C. CLAIMS ON APPEAL

The claims on appeal are: 1, 3-8, 10-15, and 17-24.

IV. STATUS OF AMENDMENTS (37 C.F.R. § 41.37(c)(2))

No amendments were filed after the final rejection mailed on February 8, 2018.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER (37 C.F.R. § 41.37(c)(1)(iii))

The claimed invention relates to network management. Specifically, the invention relates to the management of data packets to support multicasting.

Claim 1 is directed towards a video router comprising (Original Nonprovisional Pat. App. No. 11/342,167 [hereinafter "Original Specification" ("Orig. Spec.")]):

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to:

receive a layered video data stream including a base layer and a set of enhancement layers (*see, e.g.,* Orig. Spec., p. 41, ¶ [00112]; p. 56, ¶ [00152]),

identify bandwidth-limited links of a network between the video router and a plurality of video receivers in a multicast (*see, e.g.,* Orig. Spec., p. 10, ¶ [0034]; p. 33, ¶ [0093]),

forward the base layer from the video router to each of the plurality of video receivers in the multicast (*see, e.g.,* Orig. Spec., p. 9, ¶ [0033]; p. 41, ¶ [00112]), and

selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to one or more of the plurality of video receivers through the bandwidth-limited links of the network based upon throughput in the bandwidth-limited links (*see, e.g.,* Orig. Spec., p. 9, ¶ [0033]; p. 41, ¶ [00112]), and wherein the video router transmits the layered video data stream according to a selected network protocol (*see, e.g.,* Orig. Spec., p. 6, ¶ [0027]; p. 10, ¶ [0035]).

Claim 8 is directed to a method for transmitting video signals comprising (Original Nonprovisional Pat. App. No. 11/342,167 [hereinafter "Original Specification" ("Orig. Spec.")]):

receiving a layered video data stream comprising a base layer and a set of enhancement layers (*see, e.g.,* Orig. Spec., p. 41, ¶ [00112]; p. 56, ¶ [00152]);

identifying bandwidth-limited links of a network between a video router and a plurality of video receivers in a multicast (*see, e.g.,* Orig. Spec., p. 10, ¶ [0034]; p. 33, ¶ [0093]);

forwarding the base layer to each of the plurality of video receivers in the multicast (*see, e.g.,* Orig. Spec., p. 9, ¶ [0033]; p. 41, ¶ [00112]); and

selectively forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to one or more of the plurality of video receivers through the bandwidth-limited links of the network based upon throughput in the bandwidth-limited links (*see, e.g.,* Orig. Spec., p. 9, ¶ [0033]; p. 41, ¶ [00112]);

wherein the layered video data stream is transmitted via a communications channel configured for a selected network protocol (*see, e.g.,* Orig. Spec., p. 6, ¶ [0027]; p. 10, ¶ [0035]).

Claim 15 is directed to a video router comprising (Original Nonprovisional Pat. App. No. 11/342,167 [hereinafter "Original Specification" ("Orig. Spec.")]):

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to:

receive a layered video data stream that comprises a base layer and a set of enhancement layers (*see, e.g.,* Orig. Spec., p. 41, ¶ [00112]; p. 56, ¶ [00152]),

identify bandwidth-limited links of a network between the video router and a set of video receivers in a multicast (*see, e.g.,* Orig. Spec., p. 10, ¶ [0034]; p. 33, ¶ [0093]);

forward the base layer from the video router to each of the set of video receivers in the multicast (*see, e.g.,* Orig. Spec., p. 9, ¶ [0033]; p. 41, ¶ [00112]); and

wherein the video router forwards all of the set of enhancement layers to any video receiver in the set of video receivers through bandwidth-sufficient links (*see, e.g.,* Orig. Spec., p. 9, ¶¶ [0033]-[0034]; p. 13, ¶ [0043]; p. 41, ¶ [00112]),

e scalable video coding router selectively f [illegible] nore of the set of enhancement layers, but fewer than all of the set of enhancement layers to any remaining video receiver in the set of video receivers through the bandwidth-limited links based upon throughput in the bandwidth-limited links (*see, e.g.,* (*see, e.g.,* Orig. Spec., p. 9, ¶ [0033]; p. 41, ¶ [00112]); and wherein the layered video data stream is transmitted according to a selected network protocol (*see, e.g.*, Orig. Spec., p. 6, ¶ [0027]; p. 10, ¶ [0035]).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL (37 C.F.R. § 41.37(c)(1)(iv))

1. Claims 1, 3, 4, 8, 10 and 11 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Li, W (U.S. Patent No. 6,275,531) in view of Lin (U.S. Publication No. 2005/0185714).

2. Claims 5-7 and 12-14 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Li, W (U.S. Patent No. 6,275,531) in view of Li, Q. (U.S. Publication No. 2004/0071083).

3. Claims 15, 17 and 18 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Li, W (U.S. Patent No. 6,275,531) in view of Honda (U.S. Publication No. 2006/0168632) in view of Lin (U.S. Publication No. 2005/0185714).

4. Claims 19, 20 and 21 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Li, W (U.S. Patent No. 6,275,531) in view of Honda (U.S. Publication No. 2006/0168632) in view of Lin Q (U.S. Publication No. 2004/0071083).

5. Claims 22-23 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Li, W (U.S. Patent No. 6,275,531) in view of Lin (U.S. Publication No. 2005/0185714) in view of Radha (U.S. Publication No. 2004/0139219).

6. Claim 24 is rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Li, W (U.S. Patent No. 6,275,531) in view of Honda (U.S. Publication No. 2006/0168632) in view of Lin (U.S. Publication No. 2005/0185714) in view of Radha (U.S. Publication No. 2004/0139219).

VII. ARGUMENTS
(37 C.F.R. § 41.37(c)(1)(iv))

Claim Rejections – 35 U.S.C. § 103

Group I: Claims 1, 3, 4, 8, 10, and 11

Claims 1, 3, 4, 8, 10, and 11 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatenable over Li, W (US 6,275,531) in view of Lin (US 2005/0185714). Independent claim 1, which is representative of the claims in this group, is directed to a video router that comprises a memory and a processor that executes instructions stored in the memory to cause the video router to receive a layered video data stream including a base layer and a set of enhancement layers. The video router identifies bandwidth-limited links of a network between the video router and a plurality of video receivers in a multicast and forwards the base layer from the video router to each of the plurality of video receivers in the multicast. The video router selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to one or more of the plurality of video receivers through the bandwidth-limited links of the network based upon throughput in the bandwidth-limited links. The video router transmits the layered video data stream according to a selected network protocol.

The Examiner rejects claim 1 as obvious over a combination of Li, W. and paragraph 5 of Lin. Li, W. is a patent directed to a method and apparatus for adapting transmission of video data to a bandwidth of a transmission channel of a network. (Li, W., Abstract.) Specifically, Li, W. teaches determining the total number of enhancement layer bitstreams (N) that can be adapted to a given transmission channel, (*See*, Li, W. at col. 5, lines 47-56) then transmitting M enhancement layer bitstreams over the channel (60), where M ≤ N. The number of enhancement layer bitstreams (M) actually transmitted over the channel (60) is dictated by variables including network congestion and physical constraints of intermediate devices. (*See*, Li, W. at col. 5, lines 57 – 67.) An example of the system in which Li, W.'s method is implemented can be seen in [illegible] ed art, reproduced below for ease of referer

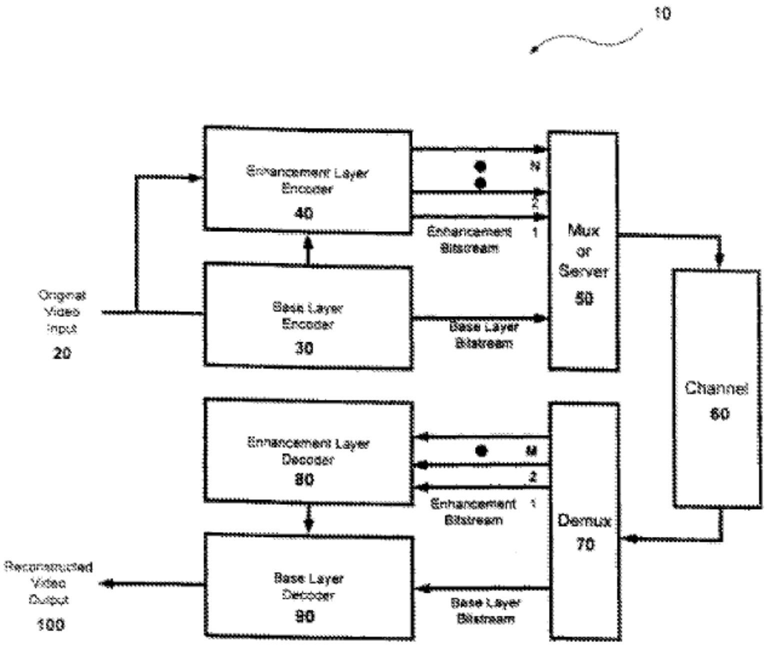
10
Enhancement Layer Encoder
40
N
2
1
Enhancement Bitstream
Mux or Server
50
Original Video Input
20
Base Layer Encoder
30
Base Layer Bitstream
Channel
60
Enhancement Layer Decoder
80
M
2
1
Enhancement Bitstream
Demux
70
Reconstructed Video Output
100
Base Layer Decoder
90
Base Layer Bitstream

FIG 1

As can be seen in Figure 1 above, Li, W. describes a system and method that encodes a base layer and N enhancement layers. In one embodiment, the base layer and all N enhancement layers are sent to a mux (50) to create a single stream of video data that is transmitted over the channel (60) to a demux (70). The base layer bitstream and the enhancement layer bitstreams are sent to their respective decoders and a reconstructed video output (100) is generated. In another embodiment, only the base layer and M enhancement layers are muxed by server (50) based on the conditions of channel (60). Thereafter, the muxed data stream is sent over the channel (60), e demux (70) to separate the data stream int tstream and the layer bitstreams, which are then sent to their respective decoders before the reconstructed video output (100) is generated. (*See*, Li, W. at col. 3, lines 19 – 32.) In either scenario, the system of Li, W. is a unicast system in which a single source sends video data to a single client over a channel. (*See*, Li, W. at col. 3, lines 27 – 28, "***[T]he*** server which provides ***the*** transmission channel to ***the*** destination point…")

Lin is a patent application that is directed novel architecture for a fine granularity scalable (FGS) codec for MPEG-4. (*See*, Lin, Abstract.) Paragraph 5 of Lin describes the generation of an FGS base layer and an enhancement layer. The base layer is transmitted from the source to the client, and if the client has extra bandwidth after receiving the FGS base layer, then the enhancement layer is transmitted. (*See*, Lin at ¶ 5, "If the client has extra bandwidth after receiving the FGS base layer, it can also receive the enhancement layer.") Quality of the reconstructed video is dependent upon the number of FGS enhancement bit planes that are received by the client. (*See*, Lin at ¶ 5.)

Returning to the rejection of claim 1 over Li, W. and Lin, the Examiner acknowledges that Li, W. fails to teach or suggest "a plurality of receivers in multicast, forwarding [a] base layer to each of the receivers in the multicast, selectively forwarding one or more of the set of enhancement layers to one or more of the plurality of video receivers" but alleges that Lin cures that deficiency, directing attention to paragraph 5 of Lin in support thereof. (*See*, Final Office Action dated February 8, 2018, at p. 3.) Paragraph 5 of Lin describes Fine Granularity Scalability (FGS), which "is very suitable for streaming video with multicasting." However, claim 1 is nonobvious over the combination of prior art references because the modification of Li, W. with the teachings of Lin would change a principle of operation of the primary reference. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti,* 270 F.2d 810, 813, 123 USPQ 349, 352 (CCPA 1959).

As already discussed, the Li, W. reference describes sending a single muxed video stream formed from a base layer and M enhancement layers over a channel based upon variables including congestion and the capabilities of the intermediate devices throughout the channel. In contrast, the cited passage of Lin teaches sending the base layer first, and if the client has [illegible]dth then the enhancement layer is sent there [illegible] at ¶ 5, "If the client [illegible]width after receiving the FGS base layer, it can also receive the enhancement layer.") The cited passage of Lin teaches that the sequential sending of the base layer first followed by the enhancement layer is the reason why "FGS is very suitable for streaming video with multicasting." (Lin, ¶ 5.) Because Li, W. teaches sending a single muxed data stream that is formed from both the base layer and M enhancement layers, Li, W. cannot be modified to send the base layer first, followed by the enhancement layers as taught by Lin without impermissibly changing Li, W.'s principle of operation.

Similarly, the modification of Li, W. with Lin's FGS codec would also change another principle of operation for adapting video quality sent to a receiver. In Li., W, video quality is dictated by dividing an enhancement layer in to N bitstreams and sending M bistreams (where M≤N bitstreams) through the channel between a source and a receiver based on channel conditions and receiver capabilities. The number of bitstreams received dictates video quality at the receiver. On the other hand, the specific FGS codec proposed by Lin discloses switches "for adaptively selecting three prediction modes to improve coding efficiency and performance." (*See*, Lin at ¶ 42.) Additionally, performance is also modified by truncating or redistributing enhancement-layer *bit-planes*. (*See*, Lin at ¶¶ 23-25) Notably, Lin is silent on selectively transmitting the number of *bitstreams* across a transmission channel. Thus, modification of Li, W. with Lin's FGS codec would arguably send all bitstreams from a source to a receiver, which would change the principle of operation of the primary reference as it relates to adaptation of video quality.

Claim 1 is also nonobvious over the cited art because the references teach away from the Examiner's proposed combination. It is improper to combine references where the references teach away from their combination. *In re Grasselli,* 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983) For example, the Examiner purports to modify Li, W.'s system and method to include the concept of FGS as taught by Lin because "It would have been obvious to incorporate the multicast FGS system of Lin into the system of Li, W. in order to apply scalable video into a multicast system." (Final Office Action dated Feb. 8, 2018, at p. 3.) However, Lin discourages the application of FGS to Li, W.'s system to accommodate multicast, as can be seen in paragraph 4 of the cited art, reproduced below for ease of reference:

> There are some traditional methods for bit-rate adaptation. One is to encode multiple bitstreams at the encoding time. However in [illegible] eo multicast environment, hundreds or thou [illegible] may access the data at the same time. The total bit rate required is the sum of the bitrates of these multiple bitstreams.

(Lin, ¶ 4) Restated, Li, W. teaches the encoding of multiple bitstreams at encoding time, (*See*, Li, W., Figure 1 and related text) and Lin acknowledges that multiple simultaneous client requests in such a system would have an undesirable effect on the total bitrate, a problem that even Li, W. acknowledges in describing its own system. (*See*, Li, W., at col. 3, lines 27-33.)

For the foregoing reasons, Appellant respectfully submits that claim 1 is nonobvious over the combination of Li, W. and Lin, and Appellant requests that the Examiner's rejection of claims 1, 3, 4, 8, 10 and 11 be overturned.

Group II: Claims 5-7 and 12-14

Claims 5-7 and 12-14 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Li, W (U.S. Patent No. 6,275,531) in view of Li, Q. (U.S. Publication No. 2004/0071083). Claim 5, which is representative of the claims in this group, recites the limitation "wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs." The Examiner acknowledges that Li, W. fails to teach this limitation but alleges that Li, Q. cures this deficiency and cites only to paragraphs 27, 28, and 30 Li, Q. in support thereof. As an initial matter, none of the paragraphs relied upon by the Examiner actually teaches a "sequence number…for each data packet is based on a layer to which the packet belongs." Accordingly, claim 5 is nonobvious.

Even assuming that Li, Q. could be interpreted as teaching all the limitations of dependent claim 5, the Examiner's purported combination lacks the necessary articulated reasoning with some rational underpinning to support a *prima facie* obviousness rejection. "[R]ejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn,* 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006); see also *KSR,* 550 U.S. at 418, 82 USPQ2d at 1396.

le, the Examiner asserts that one of ordinar would have references "in order to assign specific packets to various layers in the encoding of data." (Final Office Action dated Feb. 8, 2018, at p. 4.) However, Li, Q. already teaches that video data is separated into various bitstreams. (*See*, Li, W. at col. 3, lines 5-42.) Because Li, W. already describes separating video input into bitstreams, Li, W. already teaches the assignment of specific packets to various layers, obviating the need for sequence numbers as offered by the Examiner. Therefore, the Examiner's purported reason for combining Li, Q. with Li, W. is conclusory and unsupported by the necessary articulated reasoning with rational underpinning.

To the extent that the Examiner is arguing that the sequence numbers would be necessary for implementing the dropping and retransmission of specific packets as discussed in paragraphs 28 and 30 of Li, Q., Appellant submits that one of ordinary skill in the art would not have attempted to modify Li, W. with any feature of Li, Q. that purported to drop or retransmit *individual packets* because Li, W. teaches the dropping of *bitstream layers* in view of system congestion, (*See*, Li, W. at col. 5, lines 57-67, "…thereby necessitating the dropping of bitstream layers according to their priority") which renders sequence numbers of packets superfluous. For the foregoing reasons, dependent claim 5 is nonobvious over Li, W. and Li, Q.; and Appellant requests that the Examiner's rejection of claims 15, 17, and 18 be overturned.

Group III: Claims 15, 17 and 18

Claims 15, 17, and 18 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Li, W. (U.S. Patent No. 6,275,531) in view of Honda (U.S. Publication No. 2006/0168632) in view of Lin (U.S. Publication No. 2005/0185714). The Examiner's rejection of independent claim 15 relies on the same combination of Li, W. and Lin that was cited against independent claim 1. Therefore, Appellant incorporates by reference the same arguments set forth above with respect to the rejection of independent claim 1. Appellant requests that the Examiner's rejection of claims 15, 17, and 18 be overturned.

Group IV: Claims 19, 20 and 21

Dependent claims 19, 20, and 21 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Li, W (U.S. Patent No. 6,275,531) in view of Honda (U.S. Publication No. [illegible] view of Lin Q (U.S. Publication No. 2004/ [illegible] ndent claim 19, [illegible] sentative of this group, depends from independent claim 15. Accordingly, the arguments raised against the rejection of independent claim 15, which incorporates the arguments set forth in Group 1, are equally applicable to the rejection of dependent claims 19, 20, and 21, and are incorporated herein by reference. Appellant requests that the Examiner's rejection of claims 19, 20, and 21 be overturned.

Group V: Claims 22-23

Claims 22 and 23 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Li, W (U.S. Patent No. 6,275,531) in view of Lin (U.S. Publication No. 2005/0185714) in view of Radha (U.S. Publication No. 2004/0139219). Dependent claim 22, which is representative of the claims in this group, depends from independent claim 1. Accordingly, the arguments raised against the rejection of independent claim 1 is equally applicable to the rejection of dependent claim 22 and 23 and incorporated herein by reference. Appellant requests that the Examiner's rejection of claims 22 and 23 be overturned.

Group VI: Claim 24

Claim 24 is rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Li, W (U.S. Patent No. 6,275,531) in view of Honda (U.S. Publication No. 2006/0168632) in view of Lin (U.S. Publication No. 2005/0185714) in view of Radha (U.S. Publication No. 2004/0139219). Dependent claim 24 depends from independent claim 15. Accordingly, the arguments raised against the rejection of independent claim 15, which incorporates the arguments set forth in Group 1, are equally applicable to the rejection of dependent claim 24 and are incorporated herein by reference. Appellant requests that the Examiner's rejection of claim 24 be overturned.

CONCLUSION

In view of the above arguments, Appellant respectfully submits that all the instant claims are allowable over the cited prior art and that the application is in condition for allowance. Accordingly, Appellant respectfully requests the Patent Trial and Appeal Board to overturn the rejections set forth in the Final Office Action.

Respectfully submitted,

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Stephen Y. Liu
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Attorney for Appellant

Date: August 8, 2018

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VIII. CLAIMS APPENDIX
(37 C.F.R. § 41.37(c)(1)(v))

1. (Previously Presented) A video router comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to:

receive a layered video data stream including a base layer and a set of enhancement layers,

identify bandwidth-limited links of a network between the video router and a plurality of video receivers in a multicast,

forward the base layer from the video router to each of the plurality of video receivers in the multicast, and

selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to one or more of the plurality of video receivers through the bandwidth-limited links of the network based upon throughput in the bandwidth-limited links, and wherein the video router transmits the layered video data stream according to a selected network protocol.

2. (Cancelled)

3. (Previously Presented) The video router of claim 1, wherein the video router further selectively forwards the one or more of the set of enhancement layers based on video processing capabilities of the video receiver.

4. (Previously Presented) The video router of claim 1, wherein the video router divides width among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers.

5. (Previously Presented) The video router of claim 1, wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

6. (Previously Presented) The router of claim 5,

wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream.

7. (Previously Presented) The video router of claim 1, wherein the selected network protocol is TCP/IP.

8. (Previously Presented) A method for transmitting video signals comprising:

receiving a layered video data stream comprising a base layer and a set of enhancement layers;

identifying bandwidth-limited links of a network between a video router and a plurality of video receivers in a multicast;

forwarding the base layer to each of the plurality of video receivers in the multicast; and

selectively forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to one or more of the plurality of video receivers through the bandwidth-limited links of the network based upon throughput in the bandwidth-limited links;

wherein the layered video data stream is transmitted via a communications channel configured for a selected network protocol.

9. (Cancelled)

10. (Previously Presented) The method of claim 8, wherein the selectively forwarding step further comprises:

selectively forwarding the one or more of the set of enhancement layers based on video processing capabilities of the video receiver.

11. (Previously Presented) The method of claim 8, further comprising:
dividing available bandwidth among a plurality of data streams; and
prioritizing the set of enhancement layers for the selectively forwarding step.

12. (Previously Presented) The method of claim 8, wherein each layer of the layered video data stream comprises data packets, the method further comprising:

encoding a sequence number and a priority identifier in each of the data packets, wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

13. (Previously Presented) The method of claim 12, wherein the selectively forwarding step further comprises:

selectively forwarded the one or more of the set of enhancement layers based on a request for retransmission of one or more data packets from the layered video data stream.

14. (Original) The method of claim 8, wherein the selected network protocol is TCP/IP.

15. (Previously Presented) A video router comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to:

receive a layered video data stream that comprises a base layer and a set of enhancement layers,

identify bandwidth-limited links of a network between the video router and a set of video receivers in a multicast;

forward the base layer from the video router to each of the set of video receivers in the multicast; and

wherein the video router forwards all of the set of enhancement layers to any video receiver in the set of video receivers through bandwidth-sufficient links,

wherein the scalable video coding router selectively forwards one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to any remaining video receiver in the set of video receivers through the bandwidth-limited links based upon throughput in the bandwidth-limited links; and

wherein the layered video data stream is transmitted according to a selected network protocol.

16. (Cancelled)

17. (Previously Presented) The video router of claim 15, wherein the video router further selectively forwards the one or more of the set of enhancement layers based on video processing capabilities of each of the set of video receivers.

[illegible] [illegible]y Presented) The video router of claim 15, [illegible] router divides [illegible]width among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers.

19. (Previously Presented) The video router of claim 15, wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

20. (Previously Presented) The video router of claim 19,

wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream.

21. (Previously Presented) The video router of claim 15, wherein the selected network protocol is TCP/IP.

22. (Previously Presented) The video router of claim 1, further comprising:

a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router.

23. (Previously Presented) The method of claim 8, wherein the layered video data stream is received from another video router.

24. (Previously Presented) The video router of claim 15, further comprising:

a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router.

IX. EVIDENCE APPENDIX

There is no supplemental evidence presented with this appeal.

X. RELATED PROCEEDINGS APPENDIX

There are no proceedings related to this application.

Electronic Patent Application Fee Transmittal

Application Number:	15010573
Filing Date:	29-Jan-2016
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Filer:	Stephen Y. Liu/Jana Sanders
Attorney Docket Number:	GPB1-US9

Filed as Small Entity

Filing Fees for **Utility under 35 USC 111(a)**

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 1 month with $0 paid	2251	1	100	100
Miscellaneous:				
		Total in USD ($)		**100**

Electronic Acknowledgement Receipt

EFS ID:	33397830
Application Number:	15010573
International Application Number:	
Confirmation Number:	9731
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Customer Number:	122200
Filer:	Stephen Y. Liu/Jana Sanders
Filer Authorized By:	Stephen Y. Liu
Attorney Docket Number:	GPB1-US9
Receipt Date:	08-AUG-2018
Filing Date:	29-JAN-2016
Time Stamp:	12:12:11
Application Type:	Utility under 35 USC 111(a)

ion:

nt	yes
Payment Type	CARD
Payment was successfully received in RAM	$100
RAM confirmation Number	080818INTEFSW12140500
Deposit Account	500392
Authorized User	Jana Sanders

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Appeal Brief Filed	GPB1US9_Appeal_final.pdf	176698 c22ed3f3c640d1ceb00a03f715510b2717930b35	no	21
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30907 24bfd68881156fc42a133044692fb72359f98d9e	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	207605		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/010,573	01/29/2016	Erik Van Zijst	GPB1-US9	9731

122200 7590 12/28/2018
Carstens & Cahoon, LLP
P.O. Box 802334
Dallas, TX 75380

EXAMINER	
HONG, MICHAEL HYUN	

ART UNIT	PAPER NUMBER
2426	

NOTIFICATION DATE	DELIVERY MODE
12/28/2018	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@panoptis.com
panoptis@cclaw.com

PTOL-90A (Rev. 04/07)

Office Action Summary	**Application No.** 15/010,573	**Applicant(s)** Van Zijst, Erik	
	Examiner MICHAEL H HONG	**Art Unit** 2426	**AIA Status** No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 8/8/18.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.
3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1,3-8,10-15 and 17-24 is/are pending in the application.
5a) Of the above claim(s) _____ is/are withdrawn from consideration.
6) ☐ Claim(s) _____ is/are allowed.
7) ☑ Claim(s) 1,3-8,10-15 and 17-24 is/are rejected.
8) ☐ Claim(s) _____ is/are objected to.
9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.
11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a)☐ All b)☐ Some** c)☐ None of the:
1.☐ Certified copies of the priority documents have been received.
copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)
2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date _____.
3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
4) ☐ Other: _____.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 11-13) **Office Action Summary** Part of Paper No./Mail Date 20181126

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

NOTE: Examiner requests that attorney call examiner in order to schedule an interview to advance prosecution.

Appeal Brief

In view of the appeal brief filed on 8/8/18, PROSECUTION IS HEREBY REOPENED. **A new ground of rejection is** set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to

however, the appeal fees set forth in 37 CFR 4 creased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below.

/NASSER M GOODARZI/
Supervisory Patent Examiner, Art Unit 2426

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim(s) 1,3, 4, 8, 10, 11, 15, 17, 18, 22-24 is/are rejected under pre-AIA 35 U.S.C. 102(e) as being anticipated by Balas (US 2004/0198371).

Regarding claim 1, Balas discloses a video router(BSN fig. 1, [0030, 0039] *resource manager 60 and stream manager 62 are located at the BSN)*, comprising: memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to (fig. 4, [0024] *resource manager and stream manager run at the BSN and have processor*):

receive a layered video data stream including a base layer and a set of enhancement layers ([0023, 0024, 0025, 0027]),

identify bandwidth-limited links of a network between the video router and a plurality of video receivers in a multicast ([0022, 0024, 0029, 0031, 0032]);

forward the base layer from the video router to each of the plurality of video receivers in the multicast ([0011, 0015, 0023, 0027] *The base layer, which is the minimum amount of data necessary to render media, is transmitted*), and

selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to one or more of the plurality of video receivers through the bandwidth-limited links of the network based upon throughput in the bandwidth-limited links, and wherein the video router transmits the layered video data stream according to a selected network (3GPP2/CDMA) protocol ([0023, 0024, 0025, 0027, 0011, 0015] *enhancement layers are sent depending on network conditions*).

Regarding claim 3, 10,17, Balas discloses wherein the video router further selectively forwards the one or more of the set of enhancement layers based on video processing capabilities of the video receiver ([0029, 0024-0027]).

Regarding claim 4, 11, 18, Balas discloses wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers ([0027]).

Regarding claim 8, Balas discloses A method for transmitting video signals comprising: receiving a layered video data stream comprising a base layer and a set of enhancement layers;

identifying bandwidth-limited links of a network between a video router and a plurality of video receivers in a multicast ([0022, 0024, 0029, 0031, 0032]);

forwarding the base layer to each of the plurality of video receivers in the multicast ([0011,

27] *The base layer, which is the minimum amount of data necessary to render media, is transmitted*),: and

selectively forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to one or more of the plurality of video receivers through the bandwidth-limited links of the network based upon throughput in the bandwidth-limited links ([0023, 0024, 0025, 0027, 0011, 0015] *enhancement layers are sent depending on network conditions*).

wherein the layered video data stream is transmitted via a communications channel configured for a selected network protocol ([0011, 0015, 0009, 0032, 0038]).

Regarding claim 15, Balas discloses A video router (BSN fig. 1) comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to (fig. 4, [0024] *resource manager and stream manager run at the BSN and have processor*):

receive a layered video data stream that comprises a base layer and a set of enhancement layers ([0023, 0024, 0025, 0027]),

identify bandwidth-limited links of a network between the video router and a set of video receivers in a multicast ([0022, 0024, 0029, 0031, 0032]);

forward the base layer from the video router to each of the set of video receivers in the multicast ([0011, 0015, 0023, 0027] *The base layer, which is the minimum amount of data necessary to render media, is transmitted*),: and

wherein the video router forwards all of the set of enhancement layers to any video receiver in the set of video receivers through bandwidth-sufficient links ([0024-0026, 0035-0036] *all layers are transmitted if there is sufficient bandwidth*),

n the scalable video coding router selectively forwards one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to any remaining video receiver in the set of video receivers through the bandwidth-limited links based upon throughput in the bandwidth-limited links([0023, 0024, 0025, 0027, 0011, 0015] *enhancement layers are sent depending on network conditions*).: and

wherein the layered video data stream is transmitted according to a selected network protocol ([0011, 0015, 0009, 0032, 0038]).

Regarding claim 22, 24, Balas discloses a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router (fig. 1 layered data stream transmitted from BSN to PCF and BSC).

Regarding claim 23, Balas discloses wherein the layered video data stream is received from another video router (fig. 1 layered data stream received from BCMCS content server).

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 5, 6, 7, 12, 13, 14, 19, 20, 21 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Balas (US 2004/0198371) in view of Li, Q(US 2004/0071083).

ing claim 5, 12,19, Balas does not specifically disclose wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs .

However, Li, Q discloses wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs ([0028, 0030, 0031]). It would have been obvious to incorporate the priority flag and sequence number of

Regarding claim 6, 13, 20, Balas does not specifically disclose wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream.

However, Li, Q discloses wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream ([0027, 0028, 0030, 0037] *adaptive node requests packets which may be enhancement layers*) It would have been obvious to one of ordinary skill in the art to incorporate the retransmission requests of Li into the system of Balas in order to transmit data that was not properly received by the receiver.

Regarding claim 7,14, 21,Balas in view of Li discloses wherein the selected network protocol is TCP/IP ([0049] of Li). It would have been obvious to one of ordinary skill in the art to incorporate the TCP/IP of Li into the system of Balas in order to take advantage of the TCP/IP protocol for mobile communication networks. , forwarding

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Alternative Rejection

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action. :

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim(s) 1, 4, 5, 8, 11, 12, 15, 18, 19 is/are **alternatively** rejected under pre-AIA 35 U.S.C. 102(e) as being anticipated by Boyce (US 2005/0249240).

Regarding claim 1, Boyce discloses a video router comprising: a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router (150) to:

receive a layered video data stream including a base layer and a set of enhancement layers ([0020, 0034] *The system can have one or more enhancement layers*),

identify bandwidth-limited links of a network between the video router and a plurality of video receivers in a multicast ([0024-0026]);

forward the base layer from the video router to each of the plurality of video receivers in the multicast ([0020, 0025, 0027] *The base layer, which is the minimum amount of data necessary to render media, is transmitted*) and

selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to one or more of the plurality of video receivers through the bandwidth-limited links of the network based upon throughput in the bandwidth-limited links, wherein the video router transmits the layered video data stream according to a selected network protocol ([0018, 0024-0026, 0035-0036] *enhancement layers are sent depending on network conditions*).

Regarding claim 4, 11, 18, Boyce discloses wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers ([0037]).

Regarding claim 5, 12,19, Boyce discloses wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs ([0018 0021, 0026, 0033]).

Regarding claim 8, Boyce discloses A method for transmitting video signals comprising: receiving a layered video data stream comprising a base layer and a set of enhancement layers;

identifying bandwidth-limited links of a network between a video router and a plurality of video receivers in a multicast ([0024-0026]):

forwarding the base layer to each of the plurality of video receivers in the multicast ([0020, 0025, 0027]): and

selectively forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to one or more of the plurality of video receivers through the bandwidth-limited links of the network based upon throughput in the bandwidth-limited links ([0024-0026, 0035-0037]:

wherein the layered video data stream is transmitted via a communications channel configured for a selected network protocol ([0018]).

ing claim 15, Boyce discloses A video router comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to:

receive a layered video data stream that comprises a base layer and a set of enhancement layers ([0020, 0034]),

identify bandwidth-limited links of a network between the video router and a set of video receivers in a multicast ([0024-0026]):

forward the base layer from the video router to each of the set of video receivers in the multicast ([0020, 0025, 0027]): and

wherein the video router forwards all of the set of enhancement layers to any video receiver in the set of video receivers through bandwidth-sufficient links ([0024-0026, 0035-0036] *all layers are transmitted if there is sufficient bandwidth*),

wherein the scalable video coding router selectively forwards one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to any remaining video receiver in the set of video receivers through the bandwidth-limited links based upon throughput in the bandwidth-limited links([0024-0026, 0035-0036]): and

wherein the layered video data stream is transmitted according to a selected network protocol ([0018]).

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> on 102, if the differences between the subject matter ed and the
> are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claim 3, 10, 17 is/are **alternatively** rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Boyce (US 2005/0249240) in view of Radha (US 6,292,512).

Regarding claim 3, 10,17, Boyce does not specifically disclose wherein the video router further selectively forwards the one or more of the set of enhancement layers based on video processing capabilities of the video receiver.

However, Radha discloses wherein the video router further selectively forwards the one or more of the set of enhancement layers based on video processing capabilities of the video receiver (col. 6 lines 24-28). It would have been obvious to one of ordinary skill in the art to incorporate the video processing determination of Radha into the system of Boyce in order conserve bandwidth by transmit enhancement layers that are capable of being processed by the receiver.

Claim 6, 7, 13, 14, 20, 21 is/are **alternatively** rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Boyce (US 2005/0249240) in view of Li, Q(US 2004/0071083).

Regarding claim 6, 13, 20, Boyce does not specifically disclose wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream.

However, Li, Q discloses wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream ([0027, 0028, 0030]). It would have been obvious to one of ordinary skill in the art to incorporate the retransmission requests of Li into the system of Boyce in order to transmit data that was not properly received by the receiver.

Regarding claim 7,14, 21, Boyce in view of Li discloses wherein the selected network protocol is

of Li).

Claim 22-24 is/are **alternatively** rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Boyce (US 2005/0249240) in view of Radha2 (US 2004/0139219).

Regarding claim 22, 24, Boyce does not specifically disclose a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router.

However, Radha2 discloses a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router (fig. 4, fig. 6, [0035-0036]). It would have been obvious to incorporate the multiple routers of Radha2 into the system of Boyce in order to properly transmit the data stream in a multicasting network.

Regarding claim 23, Boyce in view of Radha2 discloses wherein the layered video data stream is received from another video router (fig. 4, 6, [0035-0037] of Radha2).

Response to Arguments

Arguments are moot in view of new grounds of rejection,

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL HYUN HONG whose telephone number is (571)270-1553. The examiner can normally be reached on M-F 9:00-5:30.

Examiner interviews are available via telephone, in-person, and video conferencing using a web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Goodarzi can be reached on (571)272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MICHAEL H HONG/
Primary Examiner, Art Unit 2426

Notice of References Cited	Application/Control No. 15/010,573	Applicant(s)/Patent Under Reexamination Van Zijst, Erik	
	Examiner MICHAEL H HONG	Art Unit 2426	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20040071083-A1	04-2004	Li, Qiong	H04N21/222	370/230
*	B	US-20040139219-A1	07-2004	Radha, Hayder	H04N21/234327	709/234
*	C	US-6292512-B1	09-2001	Radha; Hayder	H04N21/6377	375/240.1
*	D	US-20050249240-A1	11-2005	Boyce, Jill Macdonald	G10L19/24	370/469
*	E	US-20040198371-A1	10-2004	Balasubramanian, Srinivasan	H04L1/0009	455/452.2
	F					
	G					
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	L					
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FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office
PTO-892 (Rev. 01-2001) **Notice of References Cited** Part of Paper No. 20181126

Search Notes	**Application/Control No.** 15/010,573	**Applicant(s)/Patent Under Reexamination** Van Zijst, Erik
	Examiner MICHAEL H HONG	**Art Unit** 2426

CPC - Searched*

Symbol	Date	Examiner
h04n21/2662, h04n21/234	6/10/2016	MH

CPC Combination Sets - Searched*

Symbol	Date	Examiner

US Classification - Searched*

Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes

Search Notes	Date	Examiner
Inventorship search	6/10/2016	MH
east search	6/10/2016	MH
updated east search	12/21/2016	MH
updated east search	6/22/2017	MH
updated east search	2/5/2018	MH
updated east search	11/26/2018	MH

Interference Search

US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

Index of Claims	**Application/Control No.** 15/010,573	**Applicant(s)/Patent Under Reexamination** Van Zijst, Erik
	Examiner MICHAEL H HONG	**Art Unit** 2426

✓	**Rejected**		-	**Cancelled**		N	**Non-Elected**		A	**Appeal**	
=	**Allowed**		÷	**Restricted**		I	**Interference**		O	**Objected**	

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		**DATE**								
Final	Original	06/10/2016	12/21/2016	06/22/2017	02/05/2018	11/26/2018				
	1	✓	✓	✓	✓	✓				
	2	✓	✓	-	-	-				
	3	✓	✓	✓	✓	✓				
	4	✓	✓	✓	✓	✓				
	5	✓	✓	✓	✓	✓				
	6	✓	✓	✓	✓	✓				
	7	✓	✓	✓	✓	✓				
	8	✓	✓	✓	✓	✓				
	9	✓	✓	-	-	-				
	10	✓	✓	✓	✓	✓				
	11	✓	✓	✓	✓	✓				
	12	✓	✓	✓	✓	✓				
	13	✓	✓	✓	✓	✓				
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	15		✓	✓	✓	✓				
	16		✓	-	-	-				
	17		✓	✓	✓	✓				
	18		✓	✓	✓	✓				
	19		✓	✓	✓	✓				
	20		✓	✓	✓	✓				
	21		✓	✓	✓	✓				
	22				✓	✓				
	23				✓	✓				
	24				✓	✓				

U.S. Patent and Trademark Office

Part of Paper No.: 20181126

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3	"6292512".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2018/11/26 22:58
S1	1053	(scalable with router)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/03 15:09
S2	763	S1 and protocol	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/03 15:57
S3	0	WO-04010250-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 16:34
S4	2	WO-2004010250-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 16:34
S5	0	@ad<"20050126" and router same (enhancement$1 adj layer$1) same bandwidth same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 17:13
S6	4	@ad<"20050126" and router same (enhancement$1 adj layer$1) same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 17:20
S7	30	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 14:58
S8	11	S7 and priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10
		nd TCP	US-PGPU USPAT; EPO; DERWENT		FF	2016/06/10 15:10
S10	3	S8 and TCP$3	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10
S11	0	@ad<"20050126" and h04n21/2662.cpc	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:15

S12	842	@ad<"20050126" and h04n21/2662.cpc.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:15
S13	65	@ad<"20050126" and h04n21/234.cpc.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:16
S14	343	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:48
S15	30	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:48
S16	68	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scalable or scale) and priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:50
S17	15	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scalable or scale) same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:51
S18	21	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (processing)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:25
S19	0	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (receiver with power)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S20	0	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (receiver)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S21	27	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (display)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S22	71	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:29
S23	7	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same et$1 same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:30
S25	2	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1 same priority and (retransmit or retransmission)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:31
S26	5	(US-20040198371-$ or US-20020006161-$ or US-20030072376-$ or US-20030206558-$ or US-20060164987-$).did.	US-PGPUB	OR	OFF	2016/06/12 12:33
S27	1	S26 and tcp	US-PGPUB	OR	OFF	2016/06/12 12:33

S28	7	@ad<"20050126" and (enhancement$1 adj layer$1) same packet$1 same priority and (retransmit or retransmission)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 13:06
S29	4	S28 and tcp	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 13:08
S30	762	@ad<"20050126" and (enhancement$1 adj layer$1) same video	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/20 14:38
S31	23	@ad<"20050126" and ((send or forward or transmit) near2 (enhancement$1 adj layer$1)) same video	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/20 14:39
S32	5	@ad<"20050126" and ((send or forward or transmit) near2 (enhancement$1 adj layer$1)) same processing	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/21 13:15
S33	3	("20060190641" | "4422171" | "6061399").PN.	US-PGPUB; USPAT	OR	OFF	2016/12/21 13:25
S34	7	("20030023746" | "20030152076" | "5432798" | "5926758" | "6426944" | "6621799" | "7151762").PN.	US-PGPUB; USPAT	OR	OFF	2016/12/21 13:25
S35	2	"6275531".pn.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2017/09/08 10:35
S36	76	@ad<"20050126" and (multicast$3) same (enhancement adj layer$1) same (base adj layer$1)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 11:26
S37	35	@ad<"20050126" and (multicast$3) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 11:33
S38	3	"6275531".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2018/11/26 12:32
S39	1	@ad<"20050126" and (multicast$3) same (enhancement adj layer$1) same (base adj layer$1) same (throughput)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:20
S40	4	@ad<"20050126" and (multicast$3) same ancement adj layer$1) same (base adj layer$1) same (congest$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:21
S41	3	@ad<"20050126" and (node or router or server) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (IP adj multicast$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:40
S42	27	@ad<"20050126" and (node or router or server) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (multicast$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:43
S43	29	@ad<"20050126" and (node or router or	US-PGPUB;	OR	OFF	2018/11/26

		server or transmitter) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (multicast$3)	USPAT; EPO; DERWENT			13:44
S45	22	@ad<"20050126" and (adapt$5) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (multicast$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:54
S46	2	"20060168632".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2018/11/26 14:00
S47	4	@ad<"20050126" and (transmitter) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (multicast$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:35
S48	0	vickers.in. and (adaptive adj multicast)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:38
S49	0	@ad<"20050126" and (adaptive adj multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:38
S50	0	@ad<"20050126" and (adaptive with multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:38
S51	1	@ad<"20050126" and (adaptive with multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer$1)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:39
S52	1	@ad<"20050126" and (multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer$1) same feedback	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:40
S53	0	@ad<"20050126" and (multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer) same priorit$4	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 15:42
S54	6	@ad<"20050126" and (multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer) and priorit$4	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 15:44
S55	28	@ad<"20050126" and (multicast$3) and (bandwidth or congestion) same (base adj) same (enhancement adj layer) and priorit$4	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 15:47
S56	7	@ad<"20050126" and boyce.in. and (enhancement adj layer$1)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 16:09
S57	1	WO-3104935-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 16:09
S58	0	@ad<"20050126" and (multicast$3) same (processing adj (power or capabilit$3)) same (base adj layer) same	US-PGPUB; USPAT; EPO;	OR	OFF	2018/11/26 17:00

		(enhancement adj layer) and priorit$4	DERWENT			
S59	2	@ad<"20050126" and (multicast$3) same (processing adj (power or capabilit$3)) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:01
S60	9	@ad<"20050126" and (multicast$3) same (client) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:01
S61	0	@ad<"20050126" and (multicast$3) same (client near2 power) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:03
S62	7	@ad<"20050126" and (multicast$3) same (processing) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:03
S63	7	@ad<"20050126" and (multicast$3) same (resolution) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:04
S64	7	@ad<"20050126" and (processing$1 adj (power or capabilit$3)) same (base adj layer) same (enhancement adj layer) and multicast$3	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:09
S65	2	"20040139219".pn.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:20

11/26/2018 11:03:14 PM
C:\ Users\ hhong1\ Documents\ EAST\ Workspaces\ 15010573.wsp

Electronic Patent Application Fee Transmittal

Application Number:	15010573
Filing Date:	29-Jan-2016
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Filer:	Stephen Y. Liu/Jana Sanders
Attorney Docket Number:	GPB1-US9

Filed as Small Entity

Filing Fees for **Utility under 35 USC 111(a)**

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 1 month with $0 paid	2251	1	100	100
Miscellaneous:				
	Total in USD ($)			**100**

Electronic Acknowledgement Receipt

EFS ID:	35840551
Application Number:	15010573
International Application Number:	
Confirmation Number:	9731
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Customer Number:	122200
Filer:	Stephen Y. Liu/Jana Sanders
Filer Authorized By:	Stephen Y. Liu
Attorney Docket Number:	GPB1-US9
Receipt Date:	26-APR-2019
Filing Date:	29-JAN-2016
Time Stamp:	11:36:33
Application Type:	Utility under 35 USC 111(a)

ion:

nt	yes
Payment Type	CARD
Payment was successfully received in RAM	$100
RAM confirmation Number	042619INTEFSW11373100
Deposit Account	500392
Authorized User	Jana Sanders

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)
37 CFR 1.20 (Post Issuance fees)
37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	GPB1US9_ROA2.pdf	129837 925d5e7e9ff8bf1519368764a5371f311c757a95	no	11
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30907 5cc24e44a3aafd906ab4b7a2e0dfffd16237fc88	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	160744		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:	ZIJST, Eric Van
Applicant:	Blitz Stream Video, LLC
Serial Number:	15/010,573
Filing Date:	January 29, 2016
Title:	Layered Multicast and Fair Bandwidth Allocation and Packet Prioritization
Confirmation No.:	9731
Examiner:	HONG, Michael Hyun
Art Unit:	2426
Attorney File:	GPB1.US9

RESPONSE TO OFFICE ACTION MAILED DECEMBER 28, 2018

This paper is being filed responsive to an Office Action mailed December 28, 2018. Applicant notes that the three-month deadline for filing a response expires on March 28, 2019. Thus, a fee in the amount of $100.00 is believed to be due with the present filing for a one-month extension of time. Payment is made by credit card. If additional fees are due, I authorize the Commissioner to charge these fees to Carstens & Cahoon LLP, Deposit Account No. 50-0392.

Amendments to the Claims are contained in the listing of the claims, which begins on page 2 of this paper.

Remarks/Arguments begin on page 7 of this paper.

Conclusion begins on page 11 of this paper.

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A video router comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to:

receive a layered video data stream including a base layer and a set of enhancement layers,

identify bandwidth-limited links of a network between the video router and a plurality of video receivers in a multicast,

forward the base layer from the video router to each of the plurality of video receivers in the multicast, and

selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers received to one or more of the plurality of video receivers through the bandwidth-limited links of the network based upon throughput in the bandwidth-limited links, and wherein the video router transmits the layered video data stream according to TCP/IP ~~a selected network~~ protocol.

2. (Cancelled)

3. (Previously Presented) The video router of claim 1, wherein the video router further selectively forwards the one or more of the set of enhancement layers based on video processing [illegible] video receiver.

4. (Previously Presented) The video router of claim 1, wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers.

5. (Previously Presented) The video router of claim 1, wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

6. (Previously Presented) The router of claim 5,

wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream.

7. (Cancelled)

8. (Currently Amended) A method for transmitting video signals comprising:

receiving a layered video data stream comprising a base layer and a set of enhancement layers;

identifying bandwidth-limited links of a network between a video router and a plurality of video receivers in a multicast;

forwarding the base layer to each of the plurality of video receivers in the multicast; and

selectively forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers received to one or more of the plurality of video receivers through the bandwidth-limited links of the network based upon throughput in the bandwidth-limited links;

wherein the layered video data stream is transmitted via a communications channel configured for TCP/IP ~~a selected network~~ protocol.

9. (Cancelled)

10. (Previously Presented) The method of claim 8, wherein the selectively forwarding step further comprises:

selectively forwarding the one or more of the set of enhancement layers based on video processing capabilities of the video receiver.

11. (Previously Presented) The method of claim 8, further comprising:

dividing available bandwidth among a plurality of data streams; and

prioritizing the set of enhancement layers for the selectively forwarding step.

12. (Previously Presented) The method of claim 8, wherein each layer of the layered video data stream comprises data packets, the method further comprising:

encoding a sequence number and a priority identifier in each of the data packets, wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

13. (Previously Presented) The method of claim 12, wherein the selectively forwarding step further comprises:

selectively forwarded the one or more of the set of enhancement layers based on a request for retransmission of one or more data packets from the layered video data stream.

14. (Cancelled)

15. (Currently Amended) A video router comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to:

receive a layered video data stream that comprises a base layer and a set of enhancement layers,

identify bandwidth-limited links of a network between the video router and a set of video receivers in a multicast;

forward the base layer from the video router to each of the set of video receivers in the multicast; and

wherein the video router forwards all of the set of enhancement layers to any video receiver in the set of video receivers through bandwidth-sufficient links,

wherein the scalable video coding router selectively forwards one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers received to any remaining video receiver in the set of video receivers through the bandwidth-limited links based upon throughput in the bandwidth-limited links; and

wherein the layered video data stream is transmitted according to TCP/IP ~~a selected network~~ protocol.

16. (Cancelled)

17. (Previously Presented) The video router of claim 15, wherein the video router further selectively forwards the one or more of the set of enhancement layers based on video processing capabilities of each of the set of video receivers.

ously Presented) The video router of claim 15, wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers.

19. (Previously Presented) The video router of claim 15, wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

20. (Previously Presented) The video router of claim 19,

wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream.

21. (Cancelled)

22. (Previously Presented) The video router of claim 1, further comprising:

a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router.

23. (Previously Presented) The method of claim 8, wherein the layered video data stream is received from another video router.

24. (Previously Presented) The video router of claim 15, further comprising:

a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router.

REMARKS

Claims 1, 3-8, 10-15 and 17-24 are currently pending in the present application. Claims 2, 9, 16 were previously canceled. By this response, claims 1, 8, and 15 are amended, and claims 7, 14, and 21 are cancelled. Support for the amendment of claims can be found in the claims as originally written, and in the Orig. Spec. at least in paragraph 112.

No claims are withdrawn herein, and no new matter is added.

Applicant has carefully studied the outstanding Office Action. The present Response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of this application is respectfully requested. Applicant respectfully requests reconsideration and withdrawal of the Examiner's rejections in view of the foregoing amendments and following remarks.

REJECTIONS UNDER 35 U.S.C. § 102

Claims 1, 3, 4, 8, 10, 11, 15, 17, 18, 22-24

The Office Action again rejects claims 1, 3, 4, 8, 10, 11, 15, 17, 18, 22-24, under 35 U.S.C. §102(e) as being anticipated by Balas (US Patent Publication No. 2004/0198371).

Response

As an initial matter, Applicant respectfully submits that claim 1 is not anticipated by Balas for the reasons set forth by the Examiner. For example, the Examiner's rejection alleges that Balas' broadcast serving node (22) with resource manager (60) and stream manager (62) teaches Applicant's video router. (*See*, Office Action dated December 28, 2018, at p. 3.) However, the broadcast serving node (22) is not configured to forward the base layer from the broadcast serving node (22) to each of the plurality of video receivers in the multicast, or selectively forward any enhancement layers to the one or more of the plurality of video receivers, [illegible] icant's claim 1. Instead, Balas teaches that [illegible] rving node (22) [illegible] radio access network (30) to allow *radio base stations* (36) to transmit layered data streams to video receivers in a multicast. Restated, Balas does not teach a broadcast serving node (22) that sends any data *to video receivers in multicast*; therefore, Balas cannot anticipate claim 1 for the reasons offered by the Examiner.

Balas does acknowledge that the resource manager (60) and the stream manager (62) could be located within each radio base station (36). (*See*, Balas at ¶ 30.) Accordingly, Applicant has amended claim 1 to recite the limitation "wherein the layered video data stream is transmitted according to TCP/IP protocol." Data transmitted over the air interface between the radio base stations (36) to one or more mobile stations (100) would proceed according to the 3GPP2/CDMA transmission protocol rather than TCP/IP.

For the foregoing reason, amended claim 1 is not anticipated by Balas. Claims 8 and 15 recite similar amendments; therefore, claims 8 and 15 are also not anticipated by Balas. Dependent claims 3, 4, 8, 10, 11, 17, 18, and 22-24 are also not anticipated by Balas by virtue of their dependency from one of claims 1, 8 and 15. Therefore, Applicant respectfully requests reconsideration and withdrawal of the corresponding rejections.

Claims 1, 4, 5, 8, 11, 12, 15, 18, 19

The Office Action again rejects claims 1, 4, 5, 8, 11, 12, 15, 18, 19 under 35 U.S.C. §102(e) as being anticipated by Boyce (US Patent Publication No. 2005/0248240).

Response

The amendment to claim 1 renders moot the Examiner's 102 rejection of that claim in view of Boyce. As can be seen, claim 1 now recites a processor that executes instructions to "selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers received to one or more of the plurality of video receivers…" In contrast to amended claim 1, Boyce teaches a solution in which *every layer received* by a multimedia server (150) is transmitted through a network fabric (160) for reception by one or more video receivers. For example, once Boyce's multimedia server (150) receives a request for a media object, the multimedia server (150) determines the available bandwidth and expected network loss. (*See*, Boyce at ¶ 24.) Based on the network conditions, "multimedia server 150 retrieves data from [illegible] 135, and 140 in accordance with network c[illegible] etwork encounters [illegible] s, more Bi, and Bp data is retrieved and transmitted over network fabric 160, versus period of no network problems where more Ei and Ep data is transmitted." (Boyce at ¶ 36.) Bi and Ei are base layer and enhancement layer information, respectively. (*See*, Boyce at ¶ 20.) Therefore, Boyce teaches that the type and number of layers retrieved from storage can change based on network conditions, but that every layer that is received at multimedia server

(150) is transmitted through the network fabric (160). In contrast, Applicant's amended claim recites that fewer than all of the set of enhancement layers *received* are selectively forward to one or more of the plurality of video receivers.

For the foregoing reason, amended claim 1 is not anticipated by Boyce. Claims 8 and 15 recite similar amendments; therefore, claims 8 and 15 are also not anticipated by Boyce. Dependent claims 4, 5, 11, 12, 18, and 19 are also not anticipated by Boyce by virtue of their dependency from one of claims 1, 8, and 15. Therefore, Applicant respectfully requests reconsideration and withdrawal of the corresponding rejections.

REJECTIONS UNDER 35 U.S.C. § 103

Claims 5-7, 12-14 and 19-21

The Office Action rejects claims 5-7, 12-14 and 19-21, under 35 U.S.C. §103(a) as being unpatentable over by Balas (US Patent Publication No. 2004/0198371) in view of Li, Q (US Patent Publication No. 2004/0071083).

Response

As already argued above, amended claims 1 and 15 disclose limitations not taught or suggested by Balas. Because Li, Q. cannot be relied upon to cure those deficiencies, claims 1, 8, and 15 are nonobvious over Balas and Li, Q. Dependent claims 5-7, 12-14, and 19-21 are nonobvious by virtue of their dependency from one of claims 1, 8, or 15. Therefore, Applicant respectfully requests reconsideration and withdrawal of the corresponding rejections.

Claims 3, 10, 17,

The Office Action rejects claims 3, 10, and 17 under 35 U.S.C. §103(a) as being unpatentable over by Boyce (US Patent Publication No. 2005/0248240) in view of Radha (US Patent No. 6,292,512).

ady argued above, amended claims 1, 8, and 15 disclose limitations not taught or suggested by Boyce. Because Radha cannot be relied upon to cure those deficiencies, claims 1 and 15 are nonobvious over Boyce and Radha. Dependent claims 3, 10, and 17 are nonobvious by virtue of their dependency from one of claims 1, 8, or 15. Therefore, Applicant respectfully requests reconsideration and withdrawal of the corresponding rejections.

Claims 6, 7, 13, 14, 20, and 21

The Office Action rejects claims 6, 7, 13, 14, 20, 21 under 35 U.S.C. §103(a) as being unpatentable over by Boyce (US Patent Publication No. 2005/0248240) in view of Li, Q (US Patent Publication No. 2004/0071083).

Response

As already argued above, amended claims 1, 8, and 15 disclose limitations not taught or suggested by Boyce. Because Li, Q. cannot be relied upon to cure those deficiencies, claims 1, 8, and 15 are nonobvious over Boyce and Li, Q. Dependent claims 6, 7, 13, 14, 20, and 21 are nonobvious by virtue of their dependency from one of claims 1, 8, or 15. Therefore, Applicant respectfully requests reconsideration and withdrawal of the corresponding rejections.

Claims 22-24

The Office Action rejects claims 22-24 under 35 U.S.C. §103(a) as being unpatentable over Boyce (US Patent Publication No. 2005/0248240) in view of Li, Q (US Patent Publication No. 2004/0071083). in view of Radha (US Patent No. 6,292,512).

Response

As already argued above, amended claims 1, 8, and 15 discloses limitations not taught or suggested by Boyce. Because Li, Q cannot be relied upon to cure those deficiencies, claims 1, 8, and 15 are nonobvious over Boyce and Li, Q. Dependent claims 22-24 are nonobvious by virtue of their dependency from one of claims 1, 8, and 15. Therefore, Applicant respectfully requests reconsideration and withdrawal of the corresponding rejections.

CONCLUSION

It is respectfully urged that the subject application is patentable over the references cited by Examiner and is now in condition for allowance. Applicant request consideration of the application and allowance of the claims. If there are any outstanding issues that the Examiner feels may be resolved by way of a telephone conference, the Examiner is cordially invited to contact Stephen Y. Liu or Vincent J. Allen at 972-367-2001.

The Commissioner is hereby authorized to charge any additional payments that may be due or credit any overpayments to Carstens & Cahoon, LLP Deposit Account 50-0392.

Respectfully submitted,

By: /Stephen Y. Liu/
Stephen Y. Liu
Registration No. 62883
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Date: April 26, 2019

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PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/010,573	Filing Date 01/29/2016	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $210 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	04/26/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 18	Minus	** 21	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. LIE

y Paid For" IN THIS SPACE is less than 20, enter "20". RNER/

eviously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/010,573	01/29/2016	Erik Van Zijst	GPB1-US9	9731

122200 7590 08/08/2019
Carstens & Cahoon, LLP
P.O. Box 802334
Dallas, TX 75380

EXAMINER	
HONG, MICHAEL HYUN	
ART UNIT	**PAPER NUMBER**
2426	
NOTIFICATION DATE	**DELIVERY MODE**
08/08/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@panoptis.com
panoptis@cclaw.com

PTOL-90A (Rev. 04/07)

Office Action Summary	**Application No.** 15/010,573	**Applicant(s)** Van Zijst, Erik	
	Examiner MICHAEL H HONG	**Art Unit** 2426	**AIA (FITF) Status** No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 4/26/19.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☑ This action is **FINAL.** 2b) ☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1,3-6,8,10-13,15,17-20 and 22-24 is/are pending in the application.
5a) Of the above claim(s) _____ is/are withdrawn from consideration.
6) ☐ Claim(s) _____ is/are allowed.
7) ☑ Claim(s) 1,3-6,8,10-13,15,17-20 and 22-24 is/are rejected.
8) ☐ Claim(s) _____ is/are objected to.
9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a)☐ All b)☐ Some** c)☐ None of the:
1.☐ Certified copies of the priority documents have been received.
copies of the priority documents have been rec[illegible]on No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)
2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date _____.
3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
4) ☐ Other: _____.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 11-13) **Office Action Summary** Part of Paper No./Mail Date 20190804

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

NOTE: Examiner requests that attorney call examiner in order to schedule an interview to advance prosecution.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim(s) 1,3, 4, 8, 10, 11, 15, 17, 18, 22-24 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Balas (US 2004/0198371) in view of Gage (US 2003/0068584).

Regarding claim 1, Balas discloses a video router(BSN fig. 1, [0030, 0039] *resource manager 60 and stream manager 62 are located at the BSN)*, comprising: memory; and a processor, wherein the processor executes instructions stored in the memory to cause the video router to (fig. 4, [0024] *resource manager and stream manager run at the BSN and have processor*):

receive a layered video data stream including a base layer and a set of enhancement layers ([0023, 0024, 0025, 0027]),

identify bandwidth-limited links of a network between the video router and a plurality of video receivers in a multicast ([0022, 0024, 0029, 0031, 0032]);

forward the base layer from the video router to each of the plurality of video receivers in the multicast ([0011, 0015, 0023, 0027] *The base layer, which is the minimum amount of data necessary to render media, is transmitted*), and

selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers received to one or more of the plurality of video receivers through the bandwidth-limited links of the network based upon throughput in the bandwidth-limited links, and wherein the video router transmits the layered video data stream according to a selected network (3GPP2/CDMA) protocol ([0023, 0024, 0025, 0027, 0011, 0015] *enhancement layers are sent depending on network conditions*).

Balas does not specifically disclose router transmitting data according to TCP/IP protocol.

However, Gage discloses router transmitting data according to TCP/IP protocol ([0048] , fig. 1). It would have been obvious to incorporate TCP/IP of Gage into the system of Balas in order to connect the mobile system/network to the Internet.

ing claim 3, 10,17, Balas discloses wherein the video router further selectively forwards the one or more of the set of enhancement layers based on video processing capabilities of the video receiver ([0029, 0024-0027]).

Regarding claim 4, 11, 18, Balas discloses wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers ([0027]).

Regarding claim 8, Balas discloses A method for transmitting video signals comprising: receiving a layered video data stream comprising a base layer and a set of enhancement layers;

identifying bandwidth-limited links of a network between a video router and a plurality of video receivers in a multicast ([0022, 0024, 0029, 0031, 0032]);

forwarding the base layer to each of the plurality of video receivers in the multicast ([0011, 0015, 0023, 0027] *The base layer, which is the minimum amount of data necessary to render media, is transmitted*),: and

selectively forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers received to one or more of the plurality of video receivers through the bandwidth-limited links of the network based upon throughput in the bandwidth-limited links ([0023, 0024, 0025, 0027, 0011, 0015] *enhancement layers are sent depending on network conditions*).

wherein the layered video data stream is transmitted via a communications channel configured for a selected network protocol ([0011, 0015, 0009, 0032, 0038]).

Balas does not specifically disclose router transmitting data according to TCP/IP protocol.

However, Gage discloses router transmitting data according to TCP/IP protocol ([0048], fig. 1). It would have been obvious to incorporate TCP/IP of Gage into the system of Balas in order to connect the mobile system/network to the Internet.

Regarding claim 15, Balas discloses A video router (BSN fig. 1) comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to (fig. 4, [0024] *resource manager and stream manager run at the BSN and have processor*):

receive a layered video data stream that comprises a base layer and a set of enhancement layers ([0023, 0024, 0025, 0027]),

identify bandwidth-limited links of a network between the video router and a set of video receivers in a multicast ([0022, 0024, 0029, 0031, 0032]);

forward the base layer from the video router to each of the set of video receivers in the multicast ([0011, 0015, 0023, 0027] *The base layer, which is the minimum amount of data necessary to render media, is transmitted*),: and

wherein the video router forwards all of the set of enhancement layers to any video receiver in the set of video receivers through bandwidth-sufficient links ([0024-0026, 0035-0036] *all layers are transmitted if there is sufficient bandwidth*),

wherein the scalable video coding router selectively forwards one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers received to any remaining video receiver in the set of video receivers through the bandwidth-limited links based upon throughput in the bandwidth-limited links([0023, 0024, 0025, 0027, 0011, 0015] *enhancement layers are sent depending on network conditions*).: and

wherein the layered video data stream is transmitted according to a selected network protocol ([0011, 0015, 0009, 0032, 0038]).

oes not specifically disclose router transmitting data according to TCP/IP protocol.

However, Gage discloses router transmitting data according to TCP/IP protocol ([0048] , fig. 1). It would have been obvious to incorporate TCP/IP of Gage into the system of Balas in order to connect the mobile system/network to the Internet.

Regarding claim 22, 24, Balas discloses a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router (fig. 1 layered data stream transmitted from BSN to PCF and BSC).

Regarding claim 23, Balas discloses wherein the layered video data stream is received from another video router (fig. 1 layered data stream received from BCMCS content server).

Claim 5, 6, 12, 13, 19, 20, is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Balas (US 2004/0198371) in view of Gage (US 2002/0068584) in view of Li, Q(US 2004/0071083).

Regarding claim 5, 12,19, Balas in view of Gage does not specifically disclose wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs .

However, Li, Q discloses wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs ([0028, 0030, 0031]). It would have been obvious to incorporate the priority flag and sequence number of Li into the system of Balas in view of Gage in order to identify prioritized packets in data streams.

ing claim 6, 13, 20, Balas in view of Gage does not specifically disclose wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream.

However, Li, Q discloses wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream ([0027, 0028, 0030, 0037] *adaptive node requests packets which may be enhancement layers*) It would have been obvious to one of ordinary skill in the art to incorporate the retransmission requests of Li into the system of Balas in view of Gage in order to transmit data that was not properly received by the receiver.

Response to Arguments

Arguments are moot in view of new grounds of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory

l, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL HYUN HONG whose telephone number is (571)270-1553. The examiner can normally be reached on M-F 9:00-5:30.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Goodarzi can be reached on (571)272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MICHAEL H HONG/
Primary Examiner, Art Unit 2426

Notice of References Cited	Application/Control No. 15/010,573	Applicant(s)/Patent Under Reexamination Van Zijst, Erik	
	Examiner MICHAEL H HONG	Art Unit 2426	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20040071083-A1	04-2004	Li, Qiong	H04N21/222	370/230
*	B	US-20040139219-A1	07-2004	Radha, Hayder	H04N21/234327	709/234
*	C	US-6292512-B1	09-2001	Radha; Hayder	H04N21/6377	375/240.1
*	D	US-20050249240-A1	11-2005	Boyce, Jill Macdonald	G10L19/24	370/469
*	E	US-20040198371-A1	10-2004	Balasubramanian, Srinivasan	H04L1/0009	455/452.2
*	F	US-20020068584-A1	06-2002	Gage, William A.	H04L29/1216	455/456.1
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office
PTO-892 (Rev. 01-2001) **Notice of References Cited** Part of Paper No. 20190804

Index of Claims	**Application/Control No.** 15/010,573	**Applicant(s)/Patent Under Reexamination** Van Zijst, Erik
	Examiner MICHAEL H HONG	**Art Unit** 2426

✓	**Rejected**		**-**	**Cancelled**		**N**	**Non-Elected**		**A**	**Appeal**
=	**Allowed**		**÷**	**Restricted**		**I**	**Interference**		**O**	**Objected**

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/10/2016	12/21/2016	06/22/2017	02/05/2018	11/26/2018	08/04/2019			
	1	✓	✓	✓	✓	✓	✓			
	2	✓	✓	-	-	-	-			
	3	✓	✓	✓	✓	✓	✓			
	4	✓	✓	✓	✓	✓	✓			
	5	✓	✓	✓	✓	✓	✓			
	6	✓	✓	✓	✓	✓	✓			
	7	✓	✓	✓	✓	✓	-			
	8	✓	✓	✓	✓	✓	✓			
	9	✓	✓	-	-	-	-			
	10	✓	✓	✓	✓	✓	✓			
	11	✓	✓	✓	✓	✓	✓			
	12	✓	✓	✓	✓	✓	✓			
	13	✓	✓	✓	✓	✓	✓			
	14	✓	✓	✓	✓	✓	-			
	15		✓	✓	✓	✓	✓			
	16		✓	-	-	-	-			
	17		✓	✓	✓	✓	✓			
	18		✓	✓	✓	✓	✓			
	19		✓	✓	✓	✓	✓			
	20		✓	✓	✓	✓	✓			
	21		✓	✓	✓	✓	-			
	22				✓	✓	✓			
	23				✓	✓	✓			
	24				✓	✓	✓			

Search Notes	**Application/Control No.** 15/010,573	**Applicant(s)/Patent Under Reexamination** Van Zijst, Erik
	Examiner MICHAEL H HONG	**Art Unit** 2426

CPC - Searched*

Symbol	**Date**	**Examiner**
h04n21/2662, h04n21/234	6/10/2016	MH

CPC Combination Sets - Searched*

Symbol	**Date**	**Examiner**

US Classification - Searched*

Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes

Search Notes	**Date**	**Examiner**
Inventorship search	6/10/2016	MH
east search	6/10/2016	MH
updated east search	12/21/2016	MH
updated east search	6/22/2017	MH
updated east search	2/5/2018	MH
updated east search	11/26/2018	MH
updated east search	08/04/2019	MH

Interference Search

	class/CPC Group		**Examiner**

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	1741	@ad<"20050126" and ("TCP/IP" with mobile)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:14
L3	0	@ad<"20050126" and ("TCP/IP" with (mobile adj broadcast))	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:15
L4	157	@ad<"20050126" and ("TCP/IP" with (mobile adj station$1))	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:15
L5	2	@ad<"20050126" and ("TCP/IP" with (router) with "mobile station")	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:22
L6	27	@ad<"20050126" and ("TCP/IP" with (router) with "mobile")	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:23
L7	44	@ad<"20050126" and ("TCP/IP" with (video) with "mobile")	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:26
L8	65	@ad<"20050126" and ("TCP/IP" with (radio adj network))	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:36
L9	23	@ad<"20050126" and ("TCP/IP" with (radio or air) with video)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:48
L10	41	@ad<"20050126" and ("TCP/IP" with (radio or air) same video)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:49
		<"20050126" and ("TCP/IP" with radio or air) same station)	US-PGPUI USPAT; EPO; DERWENT		FF	2019/08/04 21:55
S1	1053	(scalable with router)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/03 15:09
S2	763	S1 and protocol	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/03 15:57

S3	0	WO-04010250-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 16:34
S4	2	WO-2004010250-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 16:34
S5	0	@ad<"20050126" and router same (enhancement$1 adj layer$1) same bandwidth same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 17:13
S6	4	@ad<"20050126" and router same (enhancement$1 adj layer$1) same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 17:20
S7	30	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 14:58
S8	11	S7 and priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10
S9	3	S8 and TCP	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10
S10	3	S8 and TCP$3	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10
S11	0	@ad<"20050126" and h04n21/2662.cpc	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:15
S12	842	@ad<"20050126" and h04n21/2662.cpc.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:15
S13	65	@ad<"20050126" and h04n21/234.cpc.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:16
S14	343	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:48
S15	30	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:48
S16	68	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scalable or scale) and priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:50
S17	15	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scalable or scale) same	US-PGPUB; USPAT; EPO;	OR	OFF	2016/06/12 11:51

		priority	DERWENT			
S18	21	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (processing)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:25
S19	0	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (receiver with power)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S20	0	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (receiver)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S21	27	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (display)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S22	71	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:29
S23	7	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1 same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:30
S25	2	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1 same priority and (retransmit or retransmission)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:31
S26	5	(US-20040198371-$ or US-20020006161-$ or US-20030072376-$ or US-20030206558-$ or US-20060164987-$).did.	US-PGPUB	OR	OFF	2016/06/12 12:33
S27	1	S26 and tcp	US-PGPUB	OR	OFF	2016/06/12 12:33
S28	7	@ad<"20050126" and (enhancement$1 adj layer$1) same packet$1 same priority and (retransmit or retransmission)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 13:06
S29	4	S28 and tcp	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 13:08
S30	762	@ad<"20050126" and (enhancement$1 adj layer$1) same video	US-PGPUB; USPAT; EPO; DERWEN	OR	OFF	2016/12/20 14:38
		@ad<"20050126" and ((send or forward or transmit) near2 (enhancement$1 adj layer$1)) same video	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/20 14:39
S32	5	@ad<"20050126" and ((send or forward or transmit) near2 (enhancement$1 adj layer$1)) same processing	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/21 13:15
S33	3	("20060190641" | "4422171" | "6061399").PN.	US-PGPUB; USPAT	OR	OFF	2016/12/21 13:25
S34	7	("20030023746" | "20030152076" |	US-PGPUB;	OR	OFF	2016/12/21

		"5432798" | "5926758" | "6426944" | "6621799" | "7151762").PN.	USPAT			13:25
S35	2	"6275531".pn.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2017/09/08 10:35
S36	76	@ad<"20050126" and (multicast$3) same (enhancement adj layer$1) same (base adj layer$1)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 11:26
S37	35	@ad<"20050126" and (multicast$3) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 11:33
S38	3	"6275531".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2018/11/26 12:32
S39	1	@ad<"20050126" and (multicast$3) same (enhancement adj layer$1) same (base adj layer$1) same (throughput)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:20
S40	4	@ad<"20050126" and (multicast$3) same (enhancement adj layer$1) same (base adj layer$1) same (congest$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:21
S41	3	@ad<"20050126" and (node or router or server) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (IP adj multicast$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:40
S42	27	@ad<"20050126" and (node or router or server) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (multicast$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:43
S43	29	@ad<"20050126" and (node or router or server or transmitter) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (multicast$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:44
S45	22	@ad<"20050126" and (adapt$5) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (multicast$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:54
S46	2	"20060168632".pn.	US-PGPUB; USPAT; EPO; JPO; DERWEN	OR	OFF	2018/11/26 14:00
		@ad<"20050126" and (transmitter) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (multicast$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:35
S48	0	vickers.in. and (adaptive adj multicast)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:38
S49	0	@ad<"20050126" and (adaptive adj multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:38

S50	0	@ad<"20050126" and (adaptive with multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:38
S51	1	@ad<"20050126" and (adaptive with multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer$1)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:39
S52	1	@ad<"20050126" and (multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer$1) same feedback	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:40
S53	0	@ad<"20050126" and (multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer) same priorit$4	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 15:42
S54	6	@ad<"20050126" and (multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer) and priorit$4	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 15:44
S55	28	@ad<"20050126" and (multicast$3) and (bandwidth or congestion) same (base adj layer) same (enhancement adj layer) and priorit$4	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 15:47
S56	7	@ad<"20050126" and boyce.in. and (enhancement adj layer$1)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 16:09
S57	1	WO-3104935-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 16:09
S58	0	@ad<"20050126" and (multicast$3) same (processing adj (power or capabilit$3)) same (base adj layer) same (enhancement adj layer) and priorit$4	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:00
S59	2	@ad<"20050126" and (multicast$3) same (processing adj (power or capabilit$3)) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:01
S60	9	@ad<"20050126" and (multicast$3) same (client) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:01
S61	0	@ad<"20050126" and (multicast$3) same (client near2 power) same (base adj) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:03
S62	7	@ad<"20050126" and (multicast$3) same (processing) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:03
S63	7	@ad<"20050126" and (multicast$3) same (resolution) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:04
S64	7	@ad<"20050126" and (processing$1 adj (power or capabilit$3)) same (base adj layer) same (enhancement adj layer) and	US-PGPUB; USPAT; EPO;	OR	OFF	2018/11/26 17:09

		multicast$3	DERWENT			
S65	2	"20040139219".pn.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:20
S66	3	"6292512".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2018/11/26 22:58

8/ 4/ 2019 10:53:26 PM
C:\ Users\ hhong1\ Documents\ EAST\ Workspaces\ 15010573.wsp

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	15/010,573	Filing Date	2016-01-29	Docket Number (if applicable)	GPB1-US9	Art Unit	2426
First Named Inventor	Erik Van Zijst			Examiner Name	Michael Hyun HONG		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on ______
- ☐ Other ______

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other ______

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months ______
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other ______

FEES

R 1.17(e) is required by 37 CFR 1.114 when the
authorized to charge any underpayment of fees, or credit any overpayments, to

Deposit Account No 500392

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature
☐ Applicant Signature

EFS - Web 2.1.16

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/James H. Ortega/	Date (YYYY-MM-DD)	2020-02-07
Name	James H. Ortega	Registration Number	50554

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

n this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

EFS - Web 2.1.16

Electronic Patent Application Fee Transmittal

Application Number:	15010573
Filing Date:	29-Jan-2016
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Filer:	James H. Ortega/Jana Sanders
Attorney Docket Number:	GPB1-US9

Filed as Small Entity

Filing Fees for **Utility under 35 USC 111(a)**

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 3 months with $0 paid	2253	1	700	700
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	2820	1	950	950
	Total in USD ($)			**1650**

Electronic Acknowledgement Receipt	
EFS ID:	38520607
Application Number:	15010573
International Application Number:	
Confirmation Number:	9731
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Customer Number:	122200
Filer:	James H. Ortega/Jana Sanders
Filer Authorized By:	James H. Ortega
Attorney Docket Number:	GPB1-US9
Receipt Date:	07-FEB-2020
Filing Date:	29-JAN-2016
Time Stamp:	11:39:00
Application Type:	Utility under 35 USC 111(a)

ion:

nt	yes
Payment Type	CARD
Payment was successfully received in RAM	$1650
RAM confirmation Number	E202027B41200040
Deposit Account	500392
Authorized User	Jana Sanders

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Response After Final Action	GPB1US9_RFOA.pdf	125228 d667a5e2a25cba5137fef766696f5ef9fa1dcd5e	no	11
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	GPB1US9_RCE.pdf	1350120 754bbf76ad34785d90d15425e3a2a05a414bd913	no	3
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	32886 0b85f3f1390fcf3c5da6f93a90ad311f3360d0da	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1508234		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
nter the national stage of an international appl . nt with the conditions of 35 pplicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:	ZIJST, Eric Van
Applicant:	Blitz Stream Video, LLC
Serial Number:	15/010,573
Filing Date:	January 29, 2016
Title:	Layered Multicast and Fair Bandwidth Allocation and Packet Prioritization
Confirmation No.:	9731
Examiner:	HONG, Michael Hyun
Art Unit:	2426
Attorney File:	GPB1.US9

REQUEST FOR CONTINUED EXAMINATION AND RESPONSE TO FINAL OFFICE ACTION

This paper is being filed responsive to a Final Office Action mailed August 8, 2019. Applicant notes that the three-month deadline for filing a response expired on November 8, 2019. Thus, a request for a three-month Extension of Time, along with the required fee, is being filed with the present response, which extends the response period to February 8, 2020. In addition, the present response is being filed with a Request for Continued Examination and its ierefore, this response is timely and enti it amendments and reconsideration and allowance of the present application are respectfully requested.

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A video router in an overlay multicast network, comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to:

receive a layered video data stream including a base layer and a set of enhancement layers,

identify bandwidth-limited links of a network between the video router and a plurality of video receivers in a peer-to-peer multicast,

forward the base layer from the video router to each of the plurality of video receivers in the multicast, and

selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers received to one or more of the plurality of video receivers through the bandwidth-limited links of the overlay multicast network based upon throughput in the bandwidth-limited links, and wherein the video router transmits the layered video data stream according to TCP/IP protocol.

2. (Cancelled)

3. (Previously Presented) The video router of claim 1, wherein the video router further

selectively forwards the one or more of the set of enhancement layers based on video processing capabilities of the video receiver.

4. (Previously Presented) The video router of claim 1, wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers.

5. (Previously Presented) The video router of claim 1, wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

6. (Previously Presented) The router of claim 5, wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream.

7. (Cancelled)

8. (Currently Amended) A method for transmitting video signals in an overlay multicast

od comprising:

receiving a layered video data stream comprising a base layer and a set of enhancement layers;

identifying bandwidth-limited links of ~~a~~ an overlay multicast network between a video router and a plurality of video receivers in a peer-to-peer multicast;

forwarding the base layer to each of the plurality of video receivers in the multicast; and

selectively forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers received to one or more of the plurality of video receivers through the bandwidth-limited links of the overlay multicast network based upon throughput in the bandwidth-limited links;

wherein the layered video data stream is transmitted via a communications channel configured for TCP/IP protocol.

9. (Cancelled)

10. (Previously Presented) The method of claim 8, wherein the selectively forwarding step further comprises:

selectively forwarding the one or more of the set of enhancement layers based on video processing capabilities of the video receiver.

11. (Previously Presented) The method of claim 8, further comprising:

dividing available bandwidth among a plurality of data streams; and

[illegible] g the set of enhancement layers for the sele [illegible] ng step.

12. (Previously Presented) The method of claim 8, wherein each layer of the layered video data stream comprises data packets, the method further comprising:

encoding a sequence number and a priority identifier in each of the data packets, wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

13. (Previously Presented) The method of claim 12, wherein the selectively forwarding step further comprises:

selectively forwarded the one or more of the set of enhancement layers based on a request for retransmission of one or more data packets from the layered video data stream.

14. (Cancelled)

15. (Currently Amended) A video router in an overlay multicast network, comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to:

receive a layered video data stream that comprises a base layer and a set of enhancement layers,

identify bandwidth-limited links of a network between the video router and a set of video receivers in a peer-to-peer multicast;

e base layer from the video router to each c ɔ receivers in the multicast; and

wherein the video router forwards all of the set of enhancement layers to any video receiver in the set of video receivers through bandwidth-sufficient links, wherein the scalable video coding router selectively forwards one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers received to any remaining video receiver in the set of video receivers through the bandwidth-limited links based upon throughput in the bandwidth-limited links; and

wherein the layered video data stream is transmitted according to TCP/IP protocol.

16. (Cancelled)

17. (Previously Presented) The video router of claim 15, wherein the video router further selectively forwards the one or more of the set of enhancement layers based on video processing capabilities of each of the set of video receivers.

18. (Previously Presented) The video router of claim 15, wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers.

19. (Previously Presented) The video router of claim 15, wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a

and wherein the sequence number and the r for each data packet is based upon a layer to which the packet belongs.

20. (Previously Presented) The video router of claim 19,

wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream.

21. (Cancelled)

22. (Previously Presented) The video router of claim 1, further comprising:

a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router.

23. (Previously Presented) The method of claim 8, wherein the layered video data stream is received from another video router.

24. (Previously Presented) The video router of claim 15, further comprising:

a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router.

REMARKS

Claims 1, 3-6, 8, 10-13, 15, 17-20 and 22-24 are currently pending in the present application. Claims 2, 7, 9, 14, 16 and 21 were previously canceled. By this response, independent claims 1, 8, and 15 are amended. No new matter is added.

Applicant has carefully studied the outstanding Office Action. The present Response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of this application is respectfully requested. Applicant respectfully requests reconsideration and withdrawal of the Examiner's rejections in view of the foregoing amendments and following remarks.

I. REJECTIONS UNDER 35 U.S.C. § 102

Multiple grounds of rejection under 35 U.S.C. §103 are set forth in the present Office Action. Each of these grounds of rejections are addressed in turn below.

A. Claims 1, 3, 4, 8, 10, 11, 15, 17, 18 & 22-24

The Office Action rejects claims 1, 3, 4, 8, 10, 11, 15, 17, 18 and 22-24, which includes independent claims 1, 8 and 15, under 35 U.S.C. §103 as allegedly being obvious in view of U.S. Patent Publication No. 2004/0198371 to Balas in combination with U.S. Patent Publication No. 2002/0068584 to Gage. In response, Applicant has amended independent claims 1, 8 and 15 to emphasize the distinction of the presently claimed invention(s) in view of the cited combination

In particular, independent claim 1 has been amended to recite that the claimed video router is a router limited to operation within an overlay multicast network. As such, the recited multicast in claim is clarified to be a peer-to-peer multicast. An "overlay multicast" is a peer-to-peer multicast connection (End System) for video conferencing, etc. In such an overlay or end-system multicast approach, participating peers organize themselves into an overlay topology for data delivery. Each edge in this topology corresponds to a unicast path between two end-systems or "peers" in the underlying internet or packet-switched network. Independent claims 8 and 15 have been amended in the same manner, and thus arguments set forth for claim 1 are also offered for claims 8 and 15.

In the prior response, the transmission protocol for the video streams recited in the present claims was limited to TCP/IP protocol, which is indicative of transmissions in packet-switch networks as opposed to the mobile base station radio transmissions exclusively taught in the cited Balas reference. Thus, the present Office Action now cites Gage, which teaches TCP/IP protocol transmissions, in combination with Balas in an effort to arrive at the TCP/IP multicast video data streams recited in the present claims.

Initially, Applicant notes it is highly suspect that mobile base station transmissions of Balas could be combined with the packet-switched network transmissions of Gage. However, beyond their likely incompatible combination of technologies, Applicant respectfully asserts that the cited combination of Balas and Gage does not teach or suggest multicast video streams via routers in an overlay multicast network, as is required in presently amended independent claims 1, 8 and 15. More specifically, it is established that Balas does not teach the type of video stream multicast transmissions recited in the present claims, since Balas is limited to radio transmissions ns in a mobile network. And while Ga _ the use of TCP/IP transmissions using data packets, Gage does not teach data packet transmissions across an overlay multicast network, and certainly not video streams in a peer-to-peer multicast environment as required by the present claims.

For at least the foregoing reasons, the cited combination of Balas and Gage does not teach or suggest all of the elements of independent claims 1, 8 and 15, as amended herein. Thus, amended independent claims 1, 8 and 15 are not obvious in view of the combination of Balas and Gage. Dependent claims 3, 4, 10, 11, 17, 18 and 22-24 are dependent on claims 1, 8 and 15, respectively, and thus are also not obvious in view of Balas and Gage at least by virtue of their dependency from their respective independent claim. Accordingly, it is believed that the rejection of these claims has been overcome, and thus Applicant respectfully requests withdrawal of the corresponding rejections.

B. Claims 5, 6, 12, 13, 19 & 20

The Office Action also rejects dependent claims 5, 6, 12, 13, 19 and 20 under 35 U.S.C. §103(a) as being allegedly unpatentable in view of the combination of Balas and Gage, as discussed above, and further in view of U.S. Patent Publication No. 2004/0071083 to Li, Q. In response, however, Applicant respectfully asserts that, for at least the reasons discussed above, the cited combination of Balas and Gage does not render independent claims 1, 8 or 15, as herein amended, obvious. In addition, the Li, Q reference does not cure the deficiencies of the combination of Balas and Gage, and is only cited for allegedly teaching one or more specific limitations recited only in these dependent claims. As a result, the combination of Balas and Gage with Li, Q does not render amended independent claim 1, 8 or 15 obvious. Thus, since these dependent claims are dependent on their respective amended independent claims, the alas and Gage with Li, Q also does not ren dent claims obvious since they each include all of the elements of their respective independent claim. Accordingly, Applicant respectfully requests that the rejection with regard to these dependent claims also be withdrawn.

II. CONCLUSION

It is respectfully urged that the subject application is patentable over the references cited by Examiner and is now in condition for allowance. Applicant request consideration of the application and allowance of the claims. If there are any outstanding issues that the Examiner feels may be resolved by way of a telephone conference, the Examiner is cordially invited to contact the undersigned Attorney of Record at the contact information provided below.

Applicant notes that the three-month deadline for filing a response expired on November 8, 2019. Thus, a request for a three-month Extension of Time, along with the required fee, is being filed with the present response, which extends the response period to February 8, 2020. In addition, the present response is being filed with a Request for Continued Examination and its required fee. Therefore, this response is timely and entry of the present amendments and reconsideration and allowance of the present application are respectfully requested.

Respectfully submitted,

By: /James H. Ortega/
James H. Ortega
Registration No. 50,554
Attorney for Applicant

Date: February 7, 2020

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'acsimile

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/010,573	Filing Date 01/29/2016	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	x $40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	x $210 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)		
AMENDMENT	02/07/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 18	Minus	** 21	= 0	x $50 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0	x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)		
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

y Paid For" IN THIS SPACE is less than 20, enter "20".

eviously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

SLIE

JAMIN/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/010,573	01/29/2016	Erik Van Zijst	GPB1-US9	9731

122200 7590 02/20/2020
Carstens & Cahoon, LLP
P.O. Box 802334
Dallas, TX 75380

EXAMINER	
HONG, MICHAEL HYUN	

ART UNIT	PAPER NUMBER
2426	

NOTIFICATION DATE	DELIVERY MODE
02/20/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@panoptis.com
panoptis@cclaw.com

PTOL-90A (Rev. 04/07)

Office Action Summary	**Application No.** 15/010,573	**Applicant(s)** Van Zijst, Erik	
	Examiner MICHAEL H HONG	**Art Unit** 2426	**AIA (FITF) Status** No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 2/7/20.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.
3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1,3-6,8,10-13,15,17-20 and 22-24 is/are pending in the application.
5a) Of the above claim(s) _____ is/are withdrawn from consideration.
6) ☐ Claim(s) _____ is/are allowed.
7) ☑ Claim(s) 1,3-6,8,10-13,15,17-20 and 22-24 is/are rejected.
8) ☐ Claim(s) _____ is/are objected to.
9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.
11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a)☐ All b)☐ Some** c)☐ None of the:
copies of the priority documents have been
ified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)
2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date _____.
3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
4) ☐ Other: _____.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 11-13) **Office Action Summary** Part of Paper No./Mail Date 20200214

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

Note: Examiner requests that attorney contact examiner in order to schedule an interview to advance prosecution.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/7/20 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> [illegible] invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim(s) 1, 4, 8, 11, 15, 18, 22-24 is/are rejected under pre-AIA 35 U.S.C. 102**b** as being anticipated by Deshpande (US 2002/0126698).

Regarding claim 1, Deshpande discloses video router in an overlay multicast network, comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to (fig. 1):

receive a layered video data stream including a base layer and a set of enhancement layers ([0017]),

identify bandwidth-limited links of a network between the video router and a plurality of video receivers in a peer-to-peer multicast ([0012, 0013, 0017, 0018])

forward the base layer from the video router to each of the plurality of video receivers in the multicast ([0017]), and

selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers received to one or more of the plurality of video receivers through the bandwidth-limited links of the overlay multicast network based upon throughput in the bandwidth-limited links, and wherein the video router transmits the layered video data stream according to TCP/IP protocol ([0012, 0013, 0016, 0017, 0018, 0023]).

Regarding claim 4, 11, 18, Desphande discloses wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers. ([0015]).

Regarding claim 8, Desphande discloses A method for transmitting video signals in an overlay multicast network, the method comprising (fig. 1):

red video data stream comprising a base layer and a set of enhancement layers ([0017]);

identifying bandwidth-limited links of a-an overlay multicast network between a video router and a plurality of video receivers in a peer-to-peer multicast ([0012, 0013, 0017, 0018]):

forwarding the base layer to each of the plurality of video receivers in the multicast ([0017]); and

selectively forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers received to one or more of the plurality of video receivers through the bandwidth-limited links of the overlay multicast network based upon throughput in the bandwidth-limited links;

wherein the layered video data stream is transmitted via a communications channel configured for TCP/IP protocol ([0012, 0013, 0016, 0017, 0018, 0023]).

Regarding claim 15, Desphande discloses A video router in an overlay multicast network, comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to (fig. 1):

receive a layered video data stream that comprises a base layer and a set of enhancement layers ([0017]),

identify bandwidth-limited links of a network between the video router and a set of video receivers in a peer-to-peer multicast ([0012, 0013, 0017, 0018]):

forward the base layer from the video router to each of the set of video receivers in the multicast; and

wherein the video router forwards all of the set of enhancement layers to any video receiver in the set of video receivers through bandwidth-sufficient links ([0012, 0013, 0016, 0017, 0018, 0023]),

wherein the scalable video coding router selectively forwards one or more of the set of enhancement

er than all of the set of enhancement layers received to any remaining video receiver in the set of video receivers through the bandwidth-limited links based upon throughput in the bandwidth-limited links([0012, 0013, 0016, 0017, 0018, 0023]); and wherein the layered video data stream is transmitted according to TCP/IP protocol([0012, 0013, 0016, 0017, 0018, 0023]).

Regarding claim 22, Deshpande discloses a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router (fig. 1).

Regarding claim 23, Desphande discloses wherein the layered video data stream is received from another video router (fig. 1)

Regarding claim 24, Desphande discloses a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router (fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 3, 10, 17 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over

2002/0126698) in view of XU (uS 2005/0129123).

Regarding claim 3, 10, 17, Deshpande does not specifically disclose wherein the video router selectively forwards the one or more of the set of enhancement layers based on video processing capabilities of the video receiver.

However, Xu discloses wherein the video router selectively forwards the one or more of the set of enhancement layers based on video processing capabilities of the video receiver ([0015]). It would have been obvious at the time of the invention to incorporate the video processing capabilities into the layer determination of Deshpande in order to provide clients with video quality that their device is capable of processing.

Claim 5,6, 12, 13, 19, 20, is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Deshpande (US 2002/0126698) in view of Li (US 2004/0071083).

Regarding claim 5, 12, 19, Desphande does not specifically disclose wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs.

However, Li discloses wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a priority identifier, and wherein the sequence number and the priority identifier for each data packet is based upon a layer to which the packet belongs ([0028, 0030, 0031]). It would have been obvious at the time of the invention to incorporate the sequence and identifier of Li into the system of Desphande in order to prioritize the data that is transmitted.

Regarding claim 6,13, 20 Desphande in view of Li discloses wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for

of one or more packets from the layered video data stream ([0027, 0028, 0030, 0037] Li).

Response to Arguments

Arguments are moot in view of new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL HYUN HONG whose telephone number is (571)270-1553. The examiner can normally be reached on M-F 9:00-5:30.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Goodarzi can be reached on (571)272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-

R CANADA) or 571-272-1000.

/MICHAEL H HONG/
Primary Examiner, Art Unit 2426

Notice of References Cited	Application/Control No. 15/010,573	Applicant(s)/Patent Under Reexamination Van Zijst, Erik
	Examiner MICHAEL H HONG	Art Unit 2426 — Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20020126698-A1	09-2002	Deshpande, Sachin G.	H04J3/1682	370/467
*	B	US-20050129123-A1	06-2005	Xu, Jizheng	H04N19/149	375/240.16
*	C	US-20040071083-A1	04-2004	Li, Qiong	H04N21/222	370/230
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office
PTO-892 (Rev. 01-2001) **Notice of References Cited** Part of Paper No. 20200214

Index of Claims	**Application/Control No.** 15/010,573	**Applicant(s)/Patent Under Reexamination** Van Zijst, Erik
	Examiner MICHAEL H HONG	**Art Unit** 2426

✓	**Rejected**	**-**	**Cancelled**	**N**	**Non-Elected**	**A**	**Appeal**
=	**Allowed**	**÷**	**Restricted**	**I**	**Interference**	**O**	**Objected**

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		**DATE**								
Final	Original	06/10/2016	12/21/2016	06/22/2017	02/05/2018	11/26/2018	08/04/2019	02/14/2020		
	1	✓	✓	✓	✓	✓	✓	✓		
	2	✓	✓	-	-	-	-	-		
	3	✓	✓	✓	✓	✓	✓	✓		
	4	✓	✓	✓	✓	✓	✓	✓		
	5	✓	✓	✓	✓	✓	✓	✓		
	6	✓	✓	✓	✓	✓	✓	✓		
	7	✓	✓	✓	✓	✓	-	-		
	8	✓	✓	✓	✓	✓	✓	✓		
	9	✓	✓	-	-	-	-	-		
	10	✓	✓	✓	✓	✓	✓	✓		
	11	✓	✓	✓	✓	✓	✓	✓		
	12	✓	✓	✓	✓	✓	✓	✓		
	13	✓	✓	✓	✓	✓	✓	✓		
	14	✓	✓	✓	✓	✓	-	-		
	15		✓	✓	✓	✓	✓	✓		
	16		✓	-	-	-	-	-		
	17		✓	✓	✓	✓	✓	✓		
	18		✓	✓	✓	✓	✓	✓		
	19		✓	✓	✓	✓	✓	✓		
	20		✓	✓	✓	✓	✓	✓		
	21		✓	✓	✓	✓	-	-		
	22				✓	✓	✓	✓		
	23				✓	✓	✓	✓		
	24				✓	✓	✓	✓		

Search Notes	**Application/Control No.** 15/010,573	**Applicant(s)/Patent Under Reexamination** Van Zijst, Erik
	Examiner MICHAEL H HONG	**Art Unit** 2426

CPC - Searched*

Symbol	Date	Examiner
h04n21/2662, h04n21/234	6/10/2016	MH

CPC Combination Sets - Searched*

Symbol	Date	Examiner

US Classification - Searched*

Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes

Search Notes	Date	Examiner
Inventorship search	6/10/2016	MH
east search	6/10/2016	MH
updated east search	12/21/2016	MH
updated east search	6/22/2017	MH
updated east search	2/5/2018	MH
updated east search	11/26/2018	MH
updated east search	08/04/2019	MH
updated east		

Search Notes	**Application/Control No.** 15/010,573	**Applicant(s)/Patent Under Reexamination** Van Zijst, Erik
	Examiner MICHAEL H HONG	**Art Unit** 2426

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L12	7	@ad<"20050126" and (device) with capabilit$3 with (enhancement adj layer$1)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2020/02/14 12:20
S1	1053	(scalable with router)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/03 15:09
S2	763	S1 and protocol	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/03 15:57
S3	0	WO-04010250-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 16:34
S4	2	WO-2004010250-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 16:34
S5	0	@ad<"20050126" and router same (enhancement$1 adj layer$1) same bandwidth same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 17:13
S6	4	@ad<"20050126" and router same (enhancement$1 adj layer$1) same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/09 17:20
S7	30	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scaleable or scale)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 14:58
S8	11	S7 and priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10
		d TCP	US-PGPU USPAT; EPO; DERWENT		FF	2016/06/10 15:10
S10	3	S8 and TCP$3	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:10
S11	0	@ad<"20050126" and h04n21/2662.cpc	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:15

S12	842	@ad<"20050126" and h04n21/2662.cpc.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:15
S13	65	@ad<"20050126" and h04n21/234.cpc.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/10 15:16
S14	343	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:48
S15	30	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:48
S16	68	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scalable or scale) and priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:50
S17	15	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same (scaling or scalable or scale) same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 11:51
S18	21	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (processing)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:25
S19	0	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (receiver with power)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S20	0	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (receiver)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S21	27	@ad<"20050126" and (enhancement$1 adj layer$1) same scale$1 same (display)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:28
S22	71	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:29
S23	7	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same et$1 same priority	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:30
S25	2	@ad<"20050126" and (enhancement$1 adj layer$1) same bandwidth same packet$1 same priority and (retransmit or retransmission)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 12:31
S26	5	(US-20040198371-$ or US-20020006161-$ or US-20030072376-$ or US-20030206558-$ or US-20060164987-$).did.	US-PGPUB	OR	OFF	2016/06/12 12:33
S27	1	S26 and tcp	US-PGPUB	OR	OFF	2016/06/12 12:33

S28	7	@ad<"20050126" and (enhancement$1 adj layer$1) same packet$1 same priority and (retransmit or retransmission)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 13:06
S29	4	S28 and tcp	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/06/12 13:08
S30	762	@ad<"20050126" and (enhancement$1 adj layer$1) same video	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/20 14:38
S31	23	@ad<"20050126" and ((send or forward or transmit) near2 (enhancement$1 adj layer$1)) same video	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/20 14:39
S32	5	@ad<"20050126" and ((send or forward or transmit) near2 (enhancement$1 adj layer$1)) same processing	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2016/12/21 13:15
S33	3	("20060190641" | "4422171" | "6061399").PN.	US-PGPUB; USPAT	OR	OFF	2016/12/21 13:25
S34	7	("20030023746" | "20030152076" | "5432798" | "5926758" | "6426944" | "6621799" | "7151762").PN.	US-PGPUB; USPAT	OR	OFF	2016/12/21 13:25
S35	2	"6275531".pn.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2017/09/08 10:35
S36	76	@ad<"20050126" and (multicast$3) same (enhancement adj layer$1) same (base adj layer$1)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 11:26
S37	35	@ad<"20050126" and (multicast$3) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 11:33
S38	3	"6275531".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2018/11/26 12:32
S39	1	@ad<"20050126" and (multicast$3) same (enhancement adj layer$1) same (base adj layer$1) same (throughput)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:20
S40	4	@ad<"20050126" and (multicast$3) same ancement adj layer$1) same (base adj layer$1) same (congest$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:21
S41	3	@ad<"20050126" and (node or router or server) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (IP adj multicast$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:40
S42	27	@ad<"20050126" and (node or router or server) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (multicast$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:43
S43	29	@ad<"20050126" and (node or router or	US-PGPUB;	OR	OFF	2018/11/26

		server or transmitter) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (multicast$3)	USPAT; EPO; DERWENT			13:44
S45	22	@ad<"20050126" and (adapt$5) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (multicast$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 13:54
S46	2	"20060168632".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2018/11/26 14:00
S47	4	@ad<"20050126" and (transmitter) same (enhancement adj layer$1) same (base adj layer$1) same (bandwidth or congestion) and (multicast$3)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:35
S48	0	vickers.in. and (adaptive adj multicast)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:38
S49	0	@ad<"20050126" and (adaptive adj multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:38
S50	0	@ad<"20050126" and (adaptive with multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:38
S51	1	@ad<"20050126" and (adaptive with multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer$1)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:39
S52	1	@ad<"20050126" and (multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer$1) same feedback	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 14:40
S53	0	@ad<"20050126" and (multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer) same priorit$4	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 15:42
S54	6	@ad<"20050126" and (multicast$3) same (bandwidth or congestion) same (base adj layer) same (enhancement adj layer) and priorit$4	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 15:44
S55	28	@ad<"20050126" and (multicast$3) and (bandwidth or congestion) same (base adj) same (enhancement adj layer) and priorit$4	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 15:47
S56	7	@ad<"20050126" and boyce.in. and (enhancement adj layer$1)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 16:09
S57	1	WO-3104935-$.did.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 16:09
S58	0	@ad<"20050126" and (multicast$3) same (processing adj (power or capabilit$3)) same (base adj layer) same	US-PGPUB; USPAT; EPO;	OR	OFF	2018/11/26 17:00

		(enhancement adj layer) and priorit$4	DERWENT			
S59	2	@ad<"20050126" and (multicast$3) same (processing adj (power or capabilit$3)) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:01
S60	9	@ad<"20050126" and (multicast$3) same (client) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:01
S61	0	@ad<"20050126" and (multicast$3) same (client near2 power) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:03
S62	7	@ad<"20050126" and (multicast$3) same (processing) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:03
S63	7	@ad<"20050126" and (multicast$3) same (resolution) same (base adj layer) same (enhancement adj layer)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:04
S64	7	@ad<"20050126" and (processing$1 adj (power or capabilit$3)) same (base adj layer) same (enhancement adj layer) and multicast$3	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:09
S65	2	"20040139219".pn.	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2018/11/26 17:20
S66	3	"6292512".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2018/11/26 22:58
S67	1741	@ad<"20050126" and ("TCP/IP" with mobile)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:14
S68	0	@ad<"20050126" and ("TCP/IP" with (mobile adj broadcast))	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:15
S69	157	@ad<"20050126" and ("TCP/IP" with (mobile adj station$1))	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:15
S70	[illegible]	@ad<"20050126" and ("TCP/IP" with er) with "mobile station")	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:22
S71	27	@ad<"20050126" and ("TCP/IP" with (router) with "mobile")	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:23
S72	44	@ad<"20050126" and ("TCP/IP" with (video) with "mobile")	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:26
S73	65	@ad<"20050126" and ("TCP/IP" with	US-PGPUB;	OR	OFF	2019/08/04

		(radio adj network))	USPAT; EPO; DERWENT			21:36
S74	23	@ad<"20050126" and ("TCP/IP" with (radio or air) with video)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:48
S75	41	@ad<"20050126" and ("TCP/IP" with (radio or air) same video)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:49
S76	136	@ad<"20050126" and ("TCP/IP" with (radio or air) same station)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2019/08/04 21:55
S77	43	@ad<"20050126" and (overlay adj multicast)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2020/02/13 14:02
S78	0	@ad<"20050126" and (overlay adj multicast) same (enhancement adj layer$1)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2020/02/13 14:03
S79	0	@ad<"20050126" and (overlay with multicast) same (enhancement adj layer$1)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2020/02/13 22:52
S80	68	@ad<"20050126" and (multicast) same (enhancement adj layer$1)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2020/02/13 22:52
S81	0	@ad<"20050126" and (multicast) same (enhancement adj layer$1) and (p2p or (peer adj to adj peer))	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2020/02/13 22:54
S82	18	@ad<"20050126" and (multicast) and (enhancement adj layer$1) and (p2p or ("peer-to-peer"))	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2020/02/13 22:55
S83	9	@ad<"20050126" and (multicast) same (p2p or ("peer-to-peer")) and (enhancement adj layer$1)	US-PGPUB; USPAT; EPO; DERWENT	OR	OFF	2020/02/14 08:16

2/ 14/ 2020 12:28:14 PM
C:\ Users\ hhong1\ Documents\ EAST\ Workspaces\ 15010573.wsp

Electronic Patent Application Fee Transmittal

Application Number:	15010573
Filing Date:	29-Jan-2016
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Filer:	James H. Ortega/Jana Sanders
Attorney Docket Number:	GPB1-US9

Filed as Small Entity

Filing Fees for **Utility under 35 USC 111(a)**

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 3 months with $0 paid	2253	1	700	700
Miscellaneous:				
	Total in USD ($)			**700**

Electronic Acknowledgement Receipt

EFS ID:	40341632
Application Number:	15010573
International Application Number:	
Confirmation Number:	9731
Title of Invention:	LAYERED MULTICAST AND FAIR BANDWIDTH ALLOCATION AND PACKET PRIORITIZATION
First Named Inventor/Applicant Name:	Erik Van Zijst
Customer Number:	122200
Filer:	James H. Ortega/Jana Sanders
Filer Authorized By:	James H. Ortega
Attorney Docket Number:	GPB1-US9
Receipt Date:	20-AUG-2020
Filing Date:	29-JAN-2016
Time Stamp:	16:35:56
Application Type:	Utility under 35 USC 111(a)

ion:

nt	yes
Payment Type	CARD
Payment was successfully received in RAM	$700
RAM confirmation Number	E20208JG36268869
Deposit Account	500392
Authorized User	Jana Sanders
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	GEQUI00108_ROA.pdf	211433 fc3be17f6b3368b991f4dc6083a86a41888a9d55	no	15
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	31010 305646f4348f29bce0c9eabd96288310dbc5d95f	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	242443		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

First Named Inventor:	ZIJST, Eric Van
Applicant:	Blitz Stream Video, LLC
Serial Number:	15/010,573
Filing Date:	January 29, 2016
Title:	Layered Multicast and Fair Bandwidth Allocation and Packet Prioritization
Confirmation No.:	9731
Examiner:	HONG, Michael Hyun
Art Unit:	2426
Attorney File:	GEQUI.00108

AMENDMENT AND RESPONSE TO OFFICE ACTION

This paper is being filed responsive to a non-final Office Action mailed February 20, 2020. Applicant notes that the three-month deadline for filing a response expired on May 20, 2020. Thus, a request for a three-month Extension of Time, along with the required fee, is being filed with the present response, which extends the response period to August 20, 2020. Therefore, this response is timely and entry of the present amendments and reconsideration and allowance of the present

spectfully requested.

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A video router~~ in an overlay multicast network~~, comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to:

receive a layered video data stream including a base layer and a set of enhancement layers,

identify bandwidth-limited ~~links~~ conditions of ~~a~~ an internet protocol network between the video router and a plurality of video receivers~~ in a peer-to-peer multicast~~,

forward the base layer from the video router to ~~each~~ at least two of the plurality of video receivers via the internet protocol network~~ in the multicast~~, and

selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers, ~~received~~ to at least two ~~one or more~~ of the plurality of video receivers through the ~~bandwidth-limited links of the overlay multicast~~ internet protocol network based upon ~~throughput in~~ the bandwidth-limited~~ links~~ conditions, and wherein the video router transmits the layered video data stream according to ~~TCP/IP~~ an internet protocol;

ch layer of the layered video data stream c [illegible] ckets, each of which is encoded with a sequence number and a layer identifier, and wherein the layer identifier for each data packet is based upon a layer to which the packet belongs.

2. (Cancelled)

3. (Previously Presented) The video router of claim 1, wherein the video router further selectively forwards the one or more of the set of enhancement layers based on video processing capabilities of the video receiver.

4. (Previously Presented) The video router of claim 1, wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers.

5. (Cancelled)

6. (Currently Amended) The router of claim 1~~5~~, wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream.

7. (Cancelled)

nded) A method for transmitting video sig ~~y multicast network~~,
the method comprising:

receiving a layered video data stream comprising a base layer and a set of enhancement layers;

identifying bandwidth-limited ~~links~~ conditions of ~~an overlay~~ an internet protocol network between a video router and a plurality of video receivers ~~in a peer-to-peer multicast~~;

forwarding the base layer to ~~each~~ at least two of the plurality of video receivers ~~in the multicast~~ via the internet protocol network; and

selectively forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers, ~~received~~ to at least two ~~one or more~~ of the plurality of video receivers through the ~~bandwidth-limited links of the overlay multicast~~ internet protocol network based upon ~~throughput in~~ the bandwidth-limited ~~links~~ conditions,

wherein the layered video data stream is transmitted ~~via a communications channel configured for TCP/IP~~ according to an internet protocol; and

wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a layer identifier, and wherein the layer identifier for each data packet is based upon a layer to which the packet belongs.

9. (Cancelled)

10. (Previously Presented) The method of claim 8, wherein the selectively forwarding step further comprises:

forwarding the one or more of the set of e rs based on video processing capabilities of the video receiver.

11. (Previously Presented) The method of claim 8, further comprising:

dividing available bandwidth among a plurality of data streams; and

prioritizing the set of enhancement layers for the selectively forwarding step.

12. (Cancelled)

13. (Currently Amended) The method of claim 8~~12~~, wherein the selectively forwarding step further comprises:

selectively forwarded the one or more of the set of enhancement layers based on a request for retransmission of one or more data packets from the layered video data stream.

14. (Cancelled)

15. (Currently Amended) A scalable video coding router~~ in an overlay multicast network~~, comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the scalable video coding router to:

receive a layered video data stream that comprises a base layer and a set of enhancement layers,

identify bandwidth-limited ~~links~~ conditions of ~~a~~ an internet protocol network between the video router and a set of video receivers~~ in a peer-to-peer multicast~~;

forward the base layer from the video router to ~~each~~ at least two of the set of video receivers ~~in the multicast~~; and

wherein the scalable video coding router forwards all of the set of enhancement layers to ~~any~~ at least two of the video ~~receiver~~ receivers in the set of video receivers ~~through~~ with bandwidth-sufficient ~~links~~ conditions,

wherein the scalable video coding router selectively forwards one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers, ~~received~~ to ~~any~~ at least two of the remaining video ~~receiver~~ receivers in the set of video receivers ~~through the bandwidth-limited links~~ based upon ~~throughput in~~ the bandwidth-limited ~~links~~ conditions; and

wherein the layered video data stream is transmitted according to ~~TCP/IP~~ an internet protocol, and

wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a layer identifier, and wherein the layer identifier for each data packet is based upon a layer to which the packet belongs.

16. (Cancelled)

17. (Previously Presented) The video router of claim 15, wherein the video router further

ds the one or more of the set of enhanceme n video processing capabilities of each of the set of video receivers.

18. (Previously Presented) The video router of claim 15, wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers.

19. (Cancelled)

20. (Currently Amended) The video router of claim 15~~19~~,

wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream.

21. (Cancelled)

22. (Previously Presented) The video router of claim 1, further comprising:

a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router.

23. (Previously Presented) The method of claim 8, wherein the layered video data stream is

ther video router.

24. (Previously Presented) The video router of claim 15, further comprising:

a communications link connecting the video router with at least a second video router, wherein the layered video data stream is transmitted over the communications link between the video router and the second video router.

REMARKS

Claims 1, 3-6, 8, 10-13, 15, 17-20 and 22-24 are currently pending in the present application. Claims 2, 7, 9, 14, 16 and 21 were previously canceled. By this response, independent claims 1, 8 and 15 are amended, dependent claims 5, 12 and 19 are canceled, and dependent claims 6, 13 and 20 are amended to revised their prior respective dependency to canceled claims 5, 12 and 19. No new matter is added. Accordingly, claims 1, 3, 4, 6, 8, 10, 11, 13, 15, 17, 18, 20 and 22-24, as herein amended, remain pending in the present application.

Applicant has carefully studied the outstanding Office Action. The present Response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of this application is respectfully requested. Applicant respectfully requests reconsideration and withdrawal of the present rejections in view of the foregoing amendments and following remarks.

I. REJECTIONS UNDER 35 U.S.C. §102

The Office Action has rejected claims 1, 4, 8, 11, 15, 18 and 22-24, of which claims 1, 8 and 15 are independent, under 35 U.S.C. §102 as allegedly being anticipated by U.S. Patent Publication No. 2002/0126698 to Deshpande. In response, Applicant has amended independent claims 1, 8 and 15 to emphasize the distinctions of these claims from the prior art, and specifically to include elements previously recited in dependent claims 5, 12, and 19, respectively. As a result, Applicant respectfully asserts that amended independent claims 1, 8 and 15 are not anticipated by

In particular, independent claim 1 has been amended to recite, among other things:

> wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a layer identifier, and wherein the layer identifier for each data packet is based upon a layer to which the packet belongs.

These amendments make clear that each of the data packets transmitted in the layers of video stream data comprise both a sequence number and a layer identifier. Moreover, the layer identifier is based upon a layer to which the data packet belongs. Independent claims 8 and 15 have been amended in a similar manner, and thus the arguments set forth for amended independent claim 1 are equally asserted for claims 8 and 15.

In contrast to the presently amended claims, Deshpande does not disclose each and every feature recited in the claims. Specifically, Deshpande is expressly limited to receiver-based governing of packet flow in a network. See for example the following exemplary passages in Deshpande:

> [0018] The Receiver-driven Layered Multicast (RLM) protocol and the Layered Video Multicast with Retransmissions (LVMR) protocol provide rate control for multicast receivers permitting a receiver to adapt its reception data rate to the local reception bandwidth as determined by the static homogeneity of the network link and dynamic variations in link bandwidth produced by communication channel congestion.
>
> [0019] When the receiver subscribes to a layer requiring more bandwidth than is available on the links of the network path to the receiver, the communication channel will become congested causing data packets to be dropped from the data stream degrading the quality of the received data. Data packet loss can be detected by the receiver and used to instigate dropping of a layer. On the other hand, available, but unused, reception bandwidth is not readily detectable. A layered multicast receiver indirectly detects spare reception bandwidth by periodically performing a "join experiment" in which the receiver adds the next layer and then measures the effect on data packet loss to determine if it is oversubscribed. The receiver continues accepting data packets from the added layer unless or until it determines that the packet loss is unacceptable
>
> [0045] In addition to the adjustment of the push medium layer encoding rates by the server, the present inventor concluded that pull medium reception could be further improved by action at the client. Operating under the RLM and LVMR protocols, the receiver or client can perform a join experiment and attempt to add a push medium layer at any time.

Thus, Deshpande is expressly limited to receiver-controlled governing of transmission layers, while the present claims employs router-based control of packet flow.

Furthermore, Deshpande is entirely silent on the transmission of any data packets that are transmitted in the layers of the video stream data that comprise both a sequence number and a layer identifier. Moreover, Deshpande is a receiver-based system for controlling the transmission of data packets, and there is no suggestion for providing routers of the type required in the present claims that transmit data packets in the layers of the video stream data that comprise both a sequence number and a layer identifier, as these are recited in the present claims.

For at least the foregoing reasons, the cited Deshpande reference does not teach or suggest all of the elements of independent claims 1, 8 and 15, as amended herein. Thus, amended independent claims 1, 8 and 15 are not anticipated by Deshpande. Dependent claims 4, 11, 18 and 22-24 are dependent on claims 1, 8 and 15, respectively, and thus are also not anticipated by Deshpande at least by virtue of their dependency from their respective independent claim. Accordingly, it is believed that the rejection of these claims has been overcome, and thus Applicant respectfully requests withdrawal of the corresponding rejections.

In addition, as discussed above, independent claims 1, 8 and 15 have been amended to include elements recited in now-cancelled dependent claims 5, 12 and 19. In the present Office Action, claims 5, 12 and 19 have been rejected as obvious in view of Deshpande in combination with U.S. Patent Publication No. 2004/0071083 to Li. However, Applicant respectfully asserts pendent claims 1, 8 and 15 are not obvious pande and Li for at least the reasons discussed below.

Looking specifically at the Li reference, Li discloses a network overlay system[1] comprised of a multiplicity of adaptive ("smart") nodes between a server ("source") and a receiver, wherein all of these network elements are connected via a TCP/IP network such as the Internet. The system manages the transmission of a scalable video coding (SVC) stream comprised of a base layer and multiple enhancement layers (called Fine Granular Scalability (FGS)) from the source to the receiver in such a manner as to provide a channel management model and a rate-control mechanism to optimize video quality or Signal-to-Noise (SNR) ratio of every frame or picture of the streamed video. All the adaptive nodes and receivers monitor network congestion conditions, available bandwidth, and other varying channel conditions to vary the number of channels used in transmitted streamed RGS video. The designated channels correspond to respective priority layers in the video stream. Rate-adaptive buffers are used for buffering the packets of the video stream and channels are used or not depending upon detected network conditions. For each used channel, packets are dropped or forwarded based upon detected network/bandwidth conditions. Retransmission requests are limited to avoid "network implosion." Channels are bound or unbound in both the upstream and downstream directions using a pseudo-real-time adaptive channel subscription model. In short, both the number of channels used and the data transmission rate per channel are adaptively controlled to optimize video quality for a given set of analyzed network conditions, with priority of course given to the highest priority layer(s) of the transmitted layered video stream.

a network analyzer in each smart node dete gestion by analyzing parameters such as data throughput, detected packet loss and jitter in the transmission path(s), etc.

---

[1] "The present invention provides a channel management model and rate-control mechanism for streaming FGS encoded video over data network 100 by introducing specialized nodes 51,52 (FIG. 1) disposed in the data stream to achieve scalability and allow embodiments to be **deployed directly on top of standard IP network such as data network 100**." [0017] (emphasis added).

The video data stream is comprised of a plurality of layers 20 such as an FGS base layer 21 and a plurality of enhancement video layers 22-25.

Although Li's general framework and approach to network bandwidth management techniques to optimize the delivery of layered video streams is similar in some respects to what is disclosed in the specification of the present application, Li fails to teach or suggest certain claim limitations as set forth in the previously pending claims and in the proposed amended claims. For example, Li does not disclose "wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number and a layer identifier, and wherein the layer identifier for each data packet is based upon a layer to which the packet belongs," as is now recited in all pending independent claims. Some scheme is required in Li to determine which layers get assigned to which channels, and which packets get dropped within each channel, but the scheme expressly recited in the presently amended independent claims is not taught or suggested in Li. Accordingly, although independent claims 1, 8 and 15 are amended herein to recite elements recited in prior dependent claims 5, 12 and 19, Li, whether viewed alone or in combination with Deshpande, still does not disclose or even suggest all of the elements in amended independent claims 1, 8 and 15.

II. REJECTIONS UNDER 35 U.S.C. § 103

Multiple grounds of rejection under 35 U.S.C. §103 are set forth in the present Office Action. Each of these grounds of rejections are addressed in turn below.

10 & 17

The Office Action rejects dependent claims 3, 10 and 17 under 35 U.S.C. §103(a) as allegedly being obvious in view of Deshpande in combination with U.S. Patent Publication No. 2005/0129123 to Xu. In response, however, Applicant respectfully asserts that, for at least the reasons discussed above, Deshpande (even in combination with Li) does not render independent claims 1, 8 or 15, as herein amended, obvious. In addition, the Xu reference does not cure the deficiencies of Deshpande (and Li) and is only cited for allegedly teaching one or more specific limitations recited only in these dependent claims. As a result, the combination of Deshpande with Xu (even with Li) does not render amended independent claim 1, 8 or 15 obvious. Thus, because these dependent claims are dependent on their respective amended independent claims, this combination of references also does not render these dependent claims obvious since they each include all of the elements of their respective independent claim. Accordingly, Applicant respectfully requests that the rejection with regard to these dependent claims also be withdrawn.

B. Claims 5, 6, 12, 13, 19 & 20

The Office Action also rejects dependent claims 5, 6, 12, 13, 19 and 20 under 35 U.S.C. §103(a) as being allegedly unpatentable in view of Deshpande in combination with U.S. Patent Publication No. 2004/0071083 to Li. In response, however, Applicant initially notes that claims 5, 12 and 19 have been cancelled herein, and thus their rejection has been rendered moot. In addition, with regard to dependent claims 6, 13 and 20 Applicant respectfully asserts that, for at least the reasons discussed above, Deshpande (even in combination with Li) does not render independent claims 1, 8 or 15, as herein amended, obvious. In addition, the Li reference does not cure the deficiencies of Deshpande and is only cited for allegedly teaching one or more specific limitations recited only in these dependent claims. As a result, the combination of Deshpande with amended independent claim 1, 8 or 15 obv use these dependent claims are dependent on their respective amended independent claims, the combination of Deshpande with Li also does not render these dependent claims obvious since they each include all of the elements of their respective independent claim. Accordingly, Applicant respectfully requests that the rejection with regard to these dependent claims also be withdrawn.

III. CONCLUSION

It is respectfully urged that the subject application is patentable over the references cited by Examiner and is now in condition for allowance. Applicant requests consideration of the application and allowance of the claims. If there are any outstanding issues that the Examiner feels may be resolved by way of a telephone conference, the Examiner is cordially invited to contact the undersigned Attorney of Record at the contact information provided below.

Applicant notes that the three-month deadline for filing a response expired on May 20, 2020. Thus, a request for a three-month Extension of Time, along with the required fee, is being filed with the present response, which extends the response period to August 20, 2020. Therefore, this response is timely, and entry of the present amendments and reconsideration and allowance of the present application are respectfully requested. If any additional fees are believed to be due with the present filing, or an overpayment has occurred, the Director is authorized to charge or credit any such fees to Deposit Account 50-0392, referencing the Attorney Docket number specified herein.

Respectfully submitted,

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James H. Ortega
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Attorney for Applicant

2020

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/010,573	Filing Date 01/29/2016	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $210 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	08/20/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 15	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

LIE

y Paid For" IN THIS SPACE is less than 20, enter "20".

EN/

eviously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/010,573	01/29/2016	Erik Van Zijst	GEQUI.00108	9731

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Dallas, TX 75380

EXAMINER	
HONG, MICHAEL HYUN	

ART UNIT	PAPER NUMBER
2426	

NOTIFICATION DATE	DELIVERY MODE
11/24/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@panoptis.com
panoptis@cclaw.com

PTOL-90A (Rev. 04/07)

Office Action Summary	**Application No.** 15/010,573	**Applicant(s)** Van Zijst, Erik	
	Examiner MICHAEL H HONG	**Art Unit** 2426	**AIA (FITF) Status** No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 8/20/20.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☑ This action is **FINAL**. 2b) ☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1,3-4,6,8,10-11,13,15,17-18,20 and 22-24 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1,3-4,6,8,10-11,13,15,17-18,20 and 22-24 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

copies of the priority documents have been

ified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 11-13) **Office Action Summary** Part of Paper No./Mail Date 20201120

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

Note: Examiner requests that attorney contact examiner in order to schedule an interview to advance prosecution.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim(s) 1, 4, 6, 8, 11, 13, 15, 18, 20, 22-24 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Deshpande (US 2002/0126698) in view of Li (US 2004/0071083) in view of Itakura (US 7,639,882 aka PCT WO 03/071801 with PCT Pub. Date August 28, 2003)

Regarding claim 1, Deshpande discloses video router comprising:

a memory; and

a processor, wherein the processor executes instructions stored in the memory to cause the video router to (fig. 1):

receive a layered video data stream including a base layer and a set of enhancement layers ([0017]),

identify bandwidth-limited conditions of an internet protocol network between the video router and a plurality of video receivers ([0012, 0013, 0017, 0018])

forward the base layer from the video router to at least two of the plurality of video receivers via the internet protocol network ([0017]), and

selectively forward one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to at least two of the plurality of video receivers through internet protocol network based upon the bandwidth-limited conditions, and wherein the video router transmits the layered video data stream according to an internet protocol ([0012, 0013, 0016, 0017, 0018, 0023]).

Desphande does not specifically disclose wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number.

However, Li discloses wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number ([0028, 0030, 0031]). It would have been obvious at the time of the invention to incorporate the sequence and identifier of Li into the system of Desphande in order to prioritize the data that is transmitted.

Desphande in view of Li does not specifically disclose wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a layer identifier, and wherein the layer identifier for each data packet is based upon a layer to which the packet belongs.

er, Itakura discloses wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a layer identifier, and wherein the layer identifier for each data packet is based upon a layer to which the packet belongs (col. 12 lines 5-40). It would have been obvious at the time of the invention to incorporate the layer identifier of Itakura into the system of

Desphande in view of Li in order to enable the system to group and identify packets according to various layers.

Regarding claim 4, 11, 18, Desphande discloses wherein the video router divides available bandwidth among a plurality of data streams, and wherein the video router prioritizes forwarding of the set of enhancement layers. ([0015]).

Regarding claim 6,13, 20 Desphande in view of Li discloses wherein the video router further selectively forwards the one or more of the set of enhancement layers based on a request for retransmission of one or more packets from the layered video data stream ([0027, 0028, 0030, 0037] Li).

Regarding claim 8, Desphande discloses A method for transmitting video signals, the method comprising (fig. 1):

receiving a layered video data stream comprising a base layer and a set of enhancement layers ([0017]);

identifying bandwidth-limited conditions of an internet protocol network between a video router and a plurality of video receivers ([0012, 0013, 0017, 0018]):

forwarding the base layer to at least two of the plurality of video receivers via the internet protocol network ([0017]); and selectively forwarding one or more of the set of enhancement layers, but fewer than all of the set of enhancement to at least two of the plurality of video receivers through the internet protocol network based upon the bandwidth-limited conditions;

wherein the layered video data stream is transmitted according to an internet protocol ([0012, 0013, 0016, 0017, 0018, 0023]).

Desphande does not specifically disclose wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number.

However, Li discloses wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number ([0028, 0030, 0031]). It would have been obvious at the time of the invention to incorporate the sequence and identifier of Li into the system of Desphande in order to prioritize the data that is transmitted.

Desphande in view of Li does not specifically disclose wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a layer identifier, and wherein the layer identifier for each data packet is based upon a layer to which the packet belongs.
However, Itakura discloses wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a layer identifier, and wherein the layer identifier for each data packet is based upon a layer to which the packet belongs (col. 12 lines 5-40). It would have been obvious at the time of the invention to incorporate the layer identifier of Itakura into the system of Desphande in view of Li in order to enable the system to group and identify packets according to various layers.

Regarding claim 15, Desphande discloses A scalable video coding router comprising:
a memory; and
a processor, wherein the processor executes instructions stored in the memory to cause the scalable video coding router to (fig. 1):
receive a layered video data stream that comprises a base layer and a set of enhancement layers ([0017]),

idth-limited conditions of an internet protocol network between the video router and a set of video receivers ([0012, 0013, 0017, 0018]):
forward the base layer from the video router to at least two of the set of video receivers; and

wherein the scalable video coding router forwards all of the set of enhancement layers to any video receiver in the set of video receivers through bandwidth-sufficient links ([0012, 0013, 0016, 0017, 0018, 0023]),

wherein the scalable video coding router selectively forwards one or more of the set of enhancement layers, but fewer than all of the set of enhancement layers to at least two of the remaining video receivers in the set of video receivers based upon the bandwidth limited conditions ([0012, 0013, 0016, 0017, 0018, 0023]); and

wherein the layered video data stream is transmitted according to an internet protocol([0012, 0013, 0016, 0017, 0018, 0023]).

Desphande does not specifically disclose wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number.

However, Li discloses wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a sequence number ([0028, 0030, 0031]). It would have been obvious at the time of the invention to incorporate the sequence and identifier of Li into the system of Desphande in order to prioritize the data that is transmitted.

Desphande in view of Li does not specifically disclose wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a layer identifier, and wherein the layer identifier for each data packet is based upon a layer to which the packet belongs.

However, Itakura discloses wherein each layer of the layered video data stream comprises data packets, each of which is encoded with a layer identifier, and wherein the layer identifier for each data packet is

ayer to which the packet belongs (col. 12 lines 5-40). It would have been obvious at the time of the invention to incorporate the layer identifier of Itakura into the system of Desphande in view of Li in order to enable the system to group and identify packets according to various layers.